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As one of its major activities in carrying out its purpose, the Society publishes a monthly magazine, the Canadian Geographical Journal, which is devoted to every phase of geography—historical, physical and economic—first of Canada, then of the British Empire and of the other parts of the world in which Canada has special interest. It is the intention to publish articles in this magazine that will be popular in character, easily read, well illustrated and educational to the young, as well as informative to the adult.

The Canadian Geographical Journal will be sent to each member of the Society in good standing. Membership in the Society is open to any one interested in geographical matters. The annual fee for membership is three dollars in Canada.

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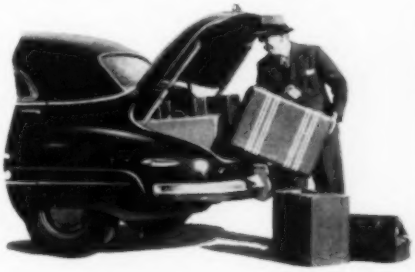

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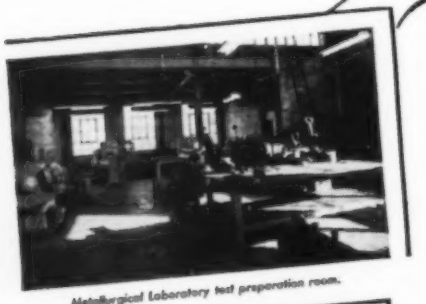
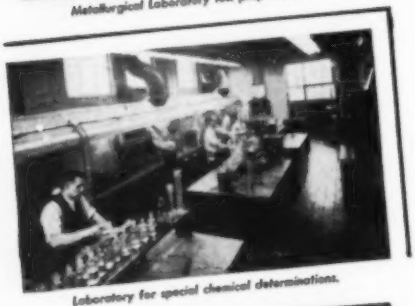
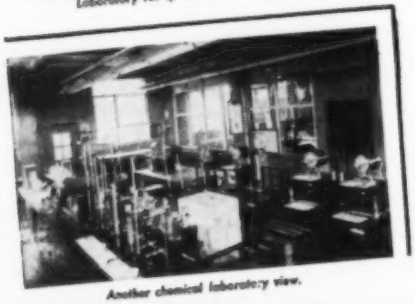


Metallurgical Laboratory test preparation room.



Laboratory for special chemical determinations.



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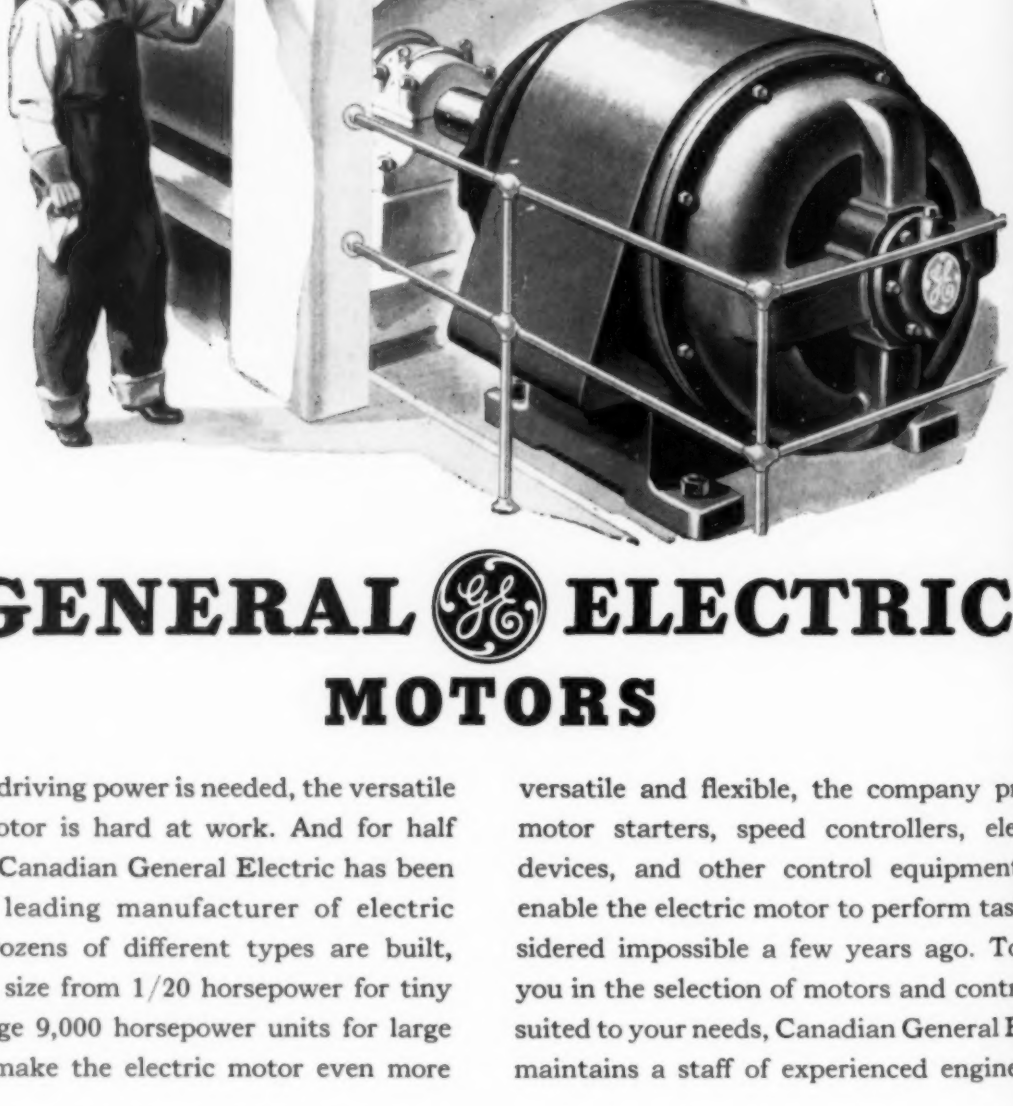

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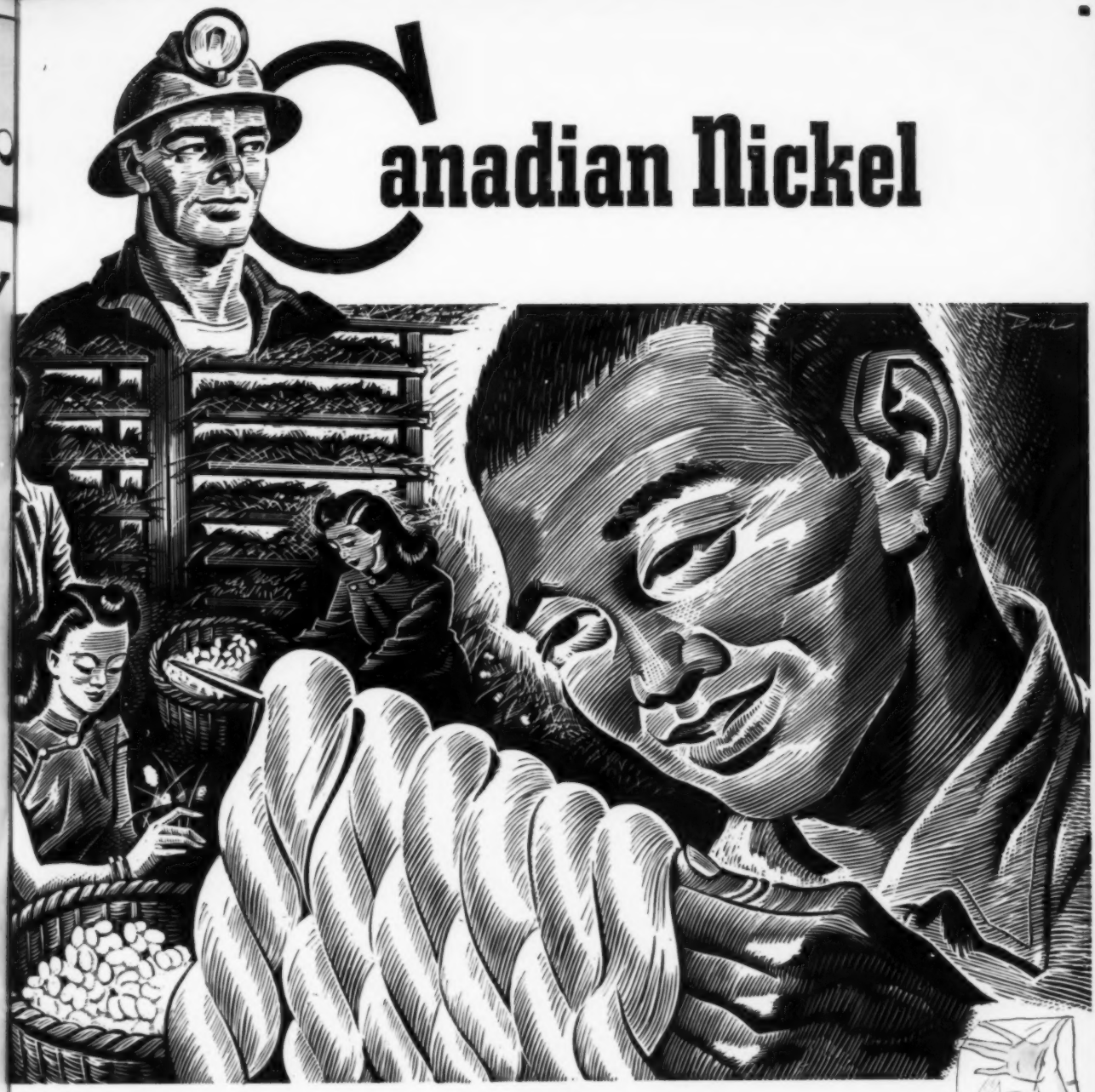

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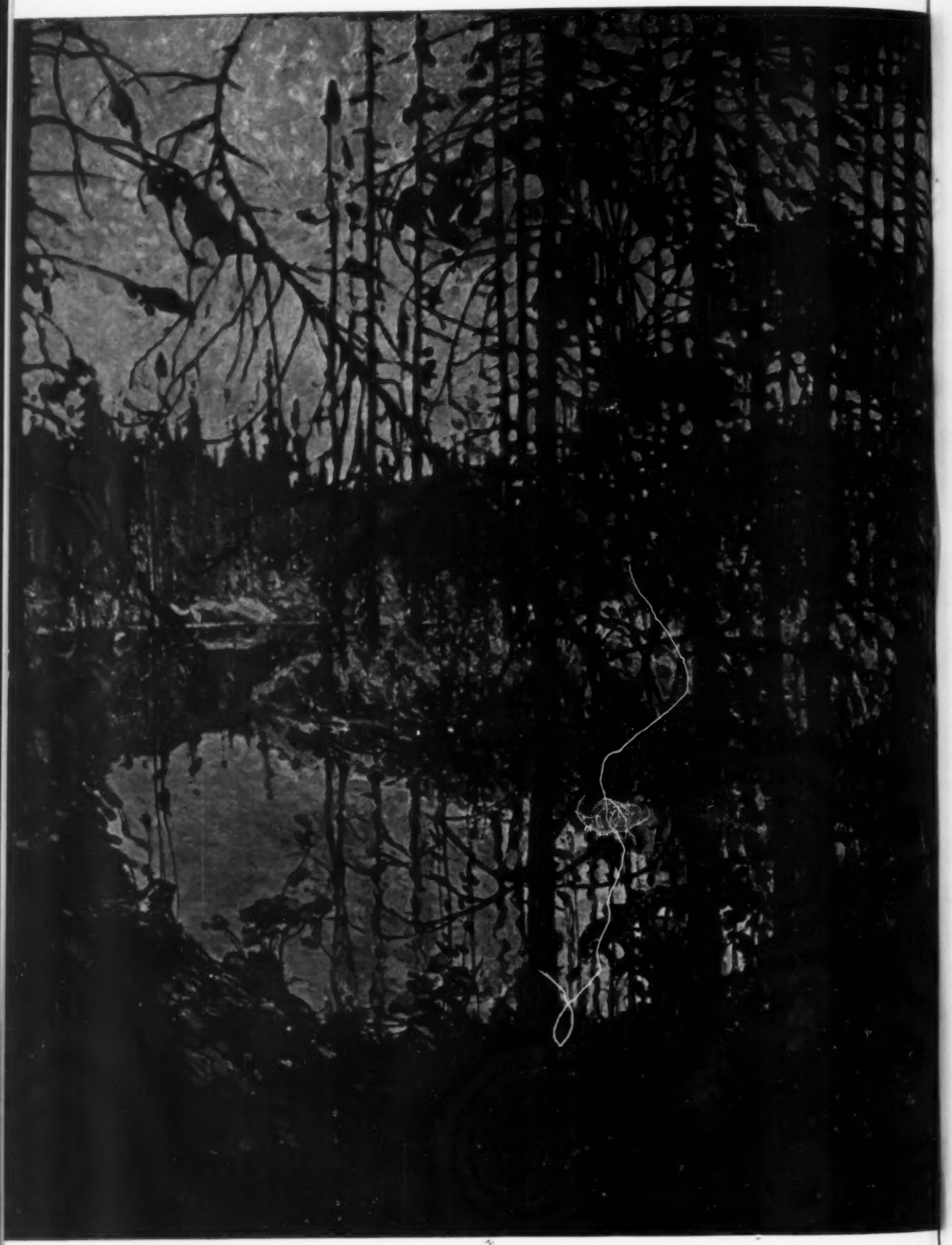

"Northern River" by Tom Thomson, R.C.A.

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CANADIAN GEOGRAPHICAL JOURNAL

Published monthly by
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This magazine is dedicated to the interpretation, in authentic and popular form, with extensive illustrations, of geography in its widest sense, first of Canada, then of the rest of the British Commonwealth and other parts of the world in which Canada has special interest.

The articles in this Journal are indexed in the *Reader's Guide to Periodical Literature* and the *Canadian Periodical Index* which may be found in any public library.

The British standard of spelling is adopted substantially as used by the Dominion Government and taught in most Canadian schools, the precise authority being the Oxford Dictionary as edited in 1936.

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Prairie Irrigation

by H. G. LONG

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WHAT is often called Canada's granary, the agricultural Prairie West, is surveying the future—now that the post-war era we have waited for so long has arrived—with as anxious an eye as any other part of the Dominion. The Prairie Provinces, too, want stability with security, with freedom from want and fear.

Over a great part of the West, however, freedom from want and fear will not result from merely removing the shackles of trade and establishing floor prices for agricultural products, or from such social security as Parliament may enact and which the national income may be expected to provide. For on the Great Plains of the Prairies there exists the Palliser Triangle, about which so much has been said and written—that huge area which extends from Coutts to Hanna in Alberta, thence to Saskatoon in Saskatchewan and thence again to the International Boundary in Southwestern Manitoba. This is the area of limited rainfall—from 8 to 16 inches. This is the potential dustbowl—sometimes, as in the thirties, more real than potential. It is the great buffalo grazing ground of bygone days, the area where the Indians and the ranchers say the farmers turned the sod that had been laid down over millions of years "wrong-side up" in the rush of the land-hungry early in the present century.

Here on the Triangle, which is the northern extension into Canada of the Great Plains of the United States Midwest, agriculture is, to a greater or less degree, submarginal. In that area the spectre of recurring droughts is always before the man

At top:—Irrigation canal and diversion weir near Lethbridge, Alberta; this is a man-made overland stream which provides the water which enables farmers to grow $100-per-acre crops on the 250,000 acres of irrigated land around Lethbridge.

Lethbridge Herald Staff photo by Lloyd Knight

on the land, especially the wheat grower. Fifteen inches of precipitation during a year when it falls at the right time may raise a bumper crop. Lack of two or three inches of rain in the growing months of May, June and July may reduce the crop to nothing or to less than eight bushels per acre, blasting the hopes of the farm family for any worthwhile return from their labours for a year. Palliser's exploration party warned us nearly 100 years ago that this would almost certainly follow any effort to practice agriculture in the Triangle.

But the great land hunger of 40 years ago led farmers to spurn Palliser's advice. And when we add up the billions of new wealth which has poured into Canadian pockets as a result of agriculture on the Great Plains, we conclude that it was probably proper that it should have been spurned. Time was, during the "Golden Twenties", when Prairie wheatlands produced more new wealth in a year than all the gold mines of all the countries of the world in the same period.

That, however, does not mean that the problem of the Triangle—the problem of too little precipitation in drought years or drought cycles—has been solved. One has only to remember what a drought cycle did to the plains area of Saskatchewan in the thirties to understand what happens when Nature withholds "the gentle rain from heaven". And one has only to know the remarkable recovery of Saskatchewan in the forties, since the rains came, to understand why prairie farmers think and talk of and pray for rain each summer.

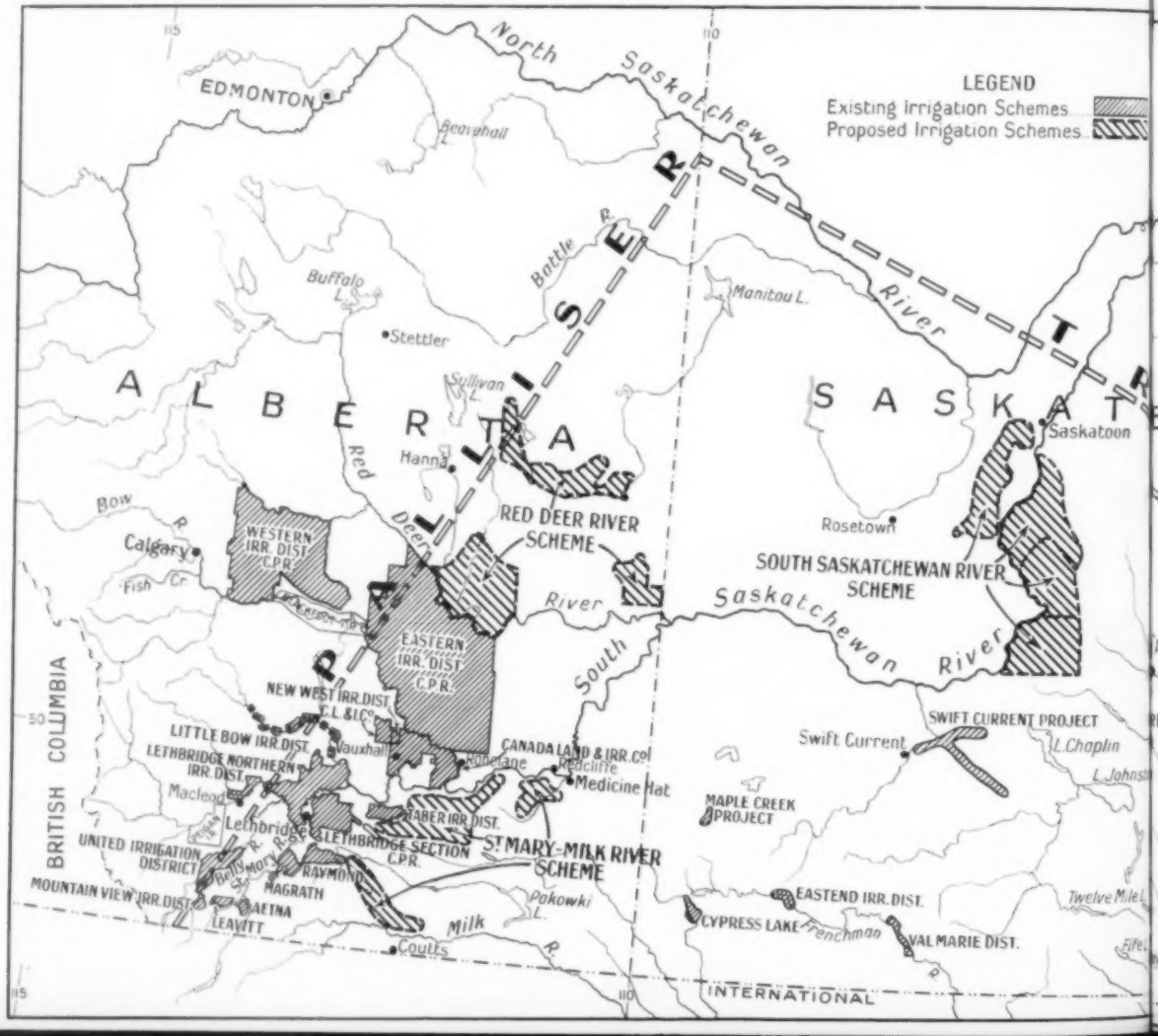
And that is why, when Hon. James G. Gardiner, Federal Minister of Agriculture, talks about expending $110,000,000 for postwar water conservation, irrigation extension and Prairie Farm Rehabilitation Act projects, and when these matters are debated in the Commons, Western ears prick up. For it means that man is planning to apply science and engineering to offset, so far as possible, the limiting factor of lack of moisture in the Great Triangle.

Irrigation has been known in Alberta since the early eighties. The first known effort to divert the streams to bring life-giving waters to the land is believed to have occurred in 1878, when John Glen took water from Fish Creek in the foothills district near Calgary and spread it over 15 or 20 acres of hay meadow. Then two Americans squatting on the Peigan Reserve west of Fort Macleod diverted Beaver Creek for irrigation. These early experimenters must have known that water added to Alberta's fertile soil would produce better crops even in those days, immediately after the Southern Alberta Blackfoot Indians had signed the Treaty of Blackfoot Crossing in 1877, preparatory to being placed upon the Indian reserves. The Government of the day appears to have recognized it, too, by enacting legislation to provide that those who would undertake to build irrigation canals and diversion works would be able to purchase the Crown lands so improved at a nominal price. Remains of those old projects of the eighties and nineties are still to be seen in the Alberta foothills—though it is now realized that the foothills country, the cradle of Alberta ranching, was much less in need of artificial watering than the Great Plains farther east.

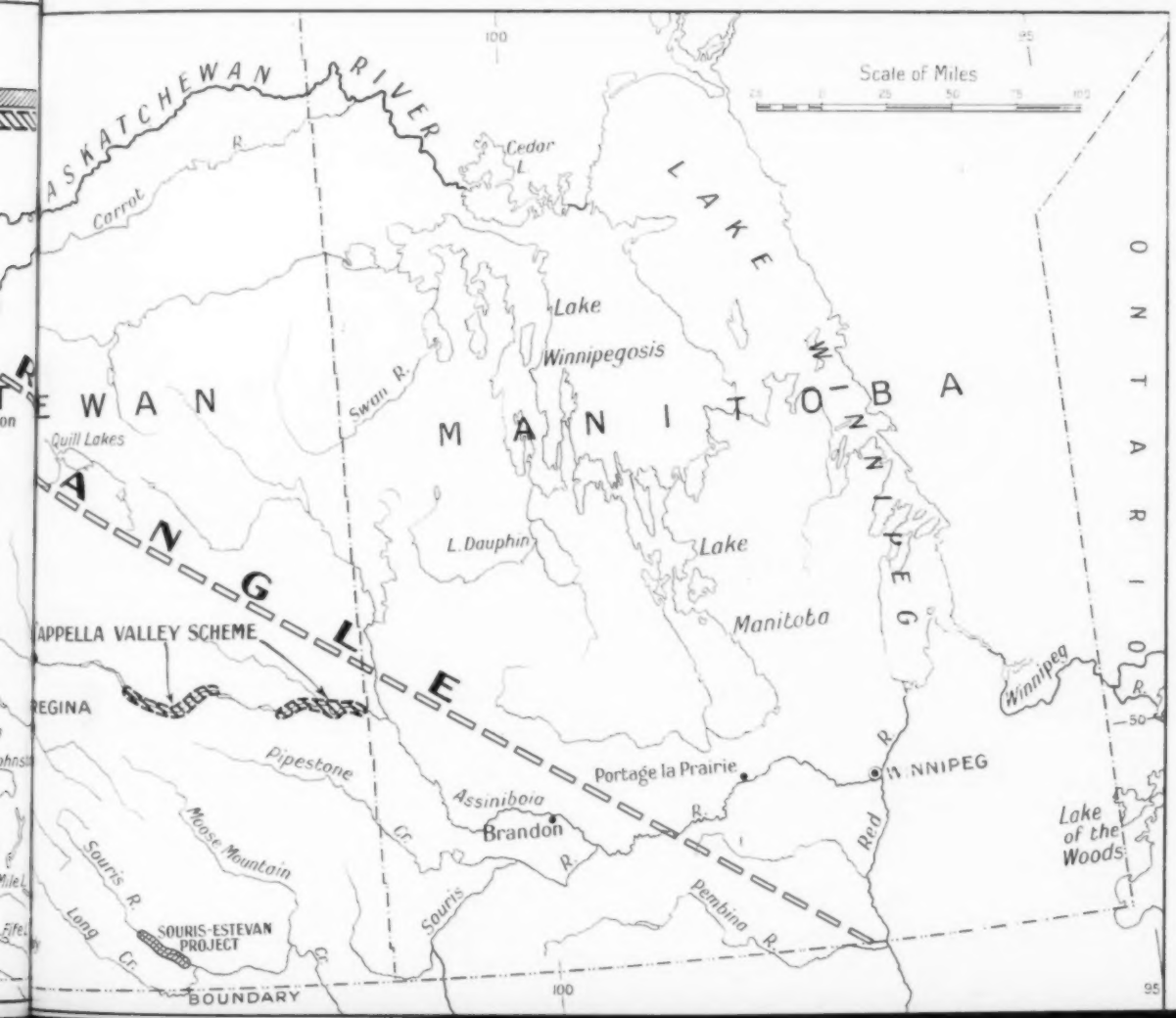
Official figures for 1943 show that there were in operation in that year nineteen major irrigation projects in Alberta capable of supplying water to some 525,000 acres, of which some 340,000 acres were actually under irrigation. In addition, there were some 616 private projects, mostly set up under the Prairie Farm Rehabilitation Act organization, supplying water from small dams and reservoirs to another 70,500 acres. Since then there have been completed a number of more or less pretentious projects in the Swift Current, Maple Creek and Val Marie districts of Southwestern Saskatchewan. And now there is talk of spending more than one hundred million dollars on water conservation and irrigation extension projects to bring the stabilizing factor of water to other parts of Alberta and Saskatchewan plains areas.

Among the contemplated new projects, one of the most important is the St. Mary-Milk Rivers project in Southern Alberta,

Cattle round-up; the drive to summer feeding of these thousand head took nearly four days. Rancher Joe Gilchrist, owner of the cattle; Henry Cavan, rancher and government representative on warble-fly control; Saskatchewan-born Slim Davidson, and two Blood Indians from a nearby reservation set up camp each night, sleeping in tents which they brought along on a small truck.



A thousand head of Hereford cattle cross an irrigation canal on their way to the feedlots in the irrigated areas, where they will fatten on alfalfa, grain and sugar-beet pulp, putting on from 300 to 400 pounds each before going to market. Canada's 200,000 ranchers and cowboys went all-out during 1943 in a special wartime effort to raise 1,200,000 head of prize beef. Federal and Provincial Governments gave financial assistance to help ranchers increase the meat output by 30 per cent. Sixty per cent of the beef was exported to United Nations. Canadian beef production has been doubled during the last five years.



Fence riding; Bill Arno veteran range rider and h wrangler, gives personal a tention to a section of t more than 500 miles of fen on this British Columb ranch.

which will make possible the addition of more than 300,000 acres lying east and south of Lethbridge to the present Canadian Pacific Railway Lethbridge project of some 120,000 acres. This will require the building of the St. Mary dam 35 miles southwest of Lethbridge at an estimated cost of $3,500,000*, and the creation of reservoirs and main connecting canals at a cost of another $11,000,000 or more. The project, which is high on the priority list of post-war reconstruction plans, will probably be undertaken jointly by the Dominion and Alberta Governments, and will carry a finger of water as far east in Southern Alberta as Medicine Hat, right into the heart of the short-grass ranching country where cattle ranches of 100,000 acres and up are still to be found.

Other projects upon which the reclamation services of Dominion and Provincial Governments are now making surveys and cost estimates are extensions of the Canada Land and Irrigation Company project at Vauxhall to Ronolane and Redcliff, northwest of Medicine Hat; and the Red Deer River and Buffalo Lake project in the east central part of South Alberta—a project derived from one conceived by the noted irrigation engineer, the late William Pearce, and which could be extended to carry water to the Rosetown and Saskatoon area of west central Saskatchewan.

In fact, there are on the P.F.R.A. files, at the headquarters of that organization at Regina, a list of some 159 projects for water storage and irrigation. Some of them have been completed and the remainder have been under study by federal reconstruction committees for the past couple of years; these projects, if carried through, would carry water to Moose Jaw and Regina to give these cities an unfailing water supply from the South Saskatchewan River, would restore the water table and lake levels over great areas of Central Saskatchewan, and would do much to offset the damage caused by recurring droughts over a large part of the western section of the Palliser Triangle.

It is an ambitious scheme, it may take long to work out, it will be costly, but if stability can be brought to agriculture in that area of some 25,000,000 acres already under cultivation, it will mean a great deal to the future security of the men and women on the land in a part of the West where Nature is, at times, very unkind.

Some people say: Why go to all the expense of building dams and reservoirs to divert water to submarginal lands when there are millions of acres of the Prairie West where drought is not a limiting factor in agriculture? Why go to all the cost of irrigation to produce more grain and more beef for which we must find a market? Why not spend the money for other important undertakings in other parts of Canada and let the dry plains revert to grass to produce cattle and sheep, which the old ranchers contend they should have been left to do in the first place?

But it is not so easy as that. When the Government of Canada, late in the nine-

*The contract for the first $750,000-stage of the St. Mary dam was awarded in July of this year.

teenth century, surveyed the Great Plains into townships and sections and quarter sections and passed the homestead law, and then invited the whole world to "come and get it", it involved this Dominion in an obligation to the land hungry who accepted the invitation to come in their tens of thousands to break up the sod, build homes and roads, schools and churches, villages and towns and cities; to the pioneers who made the Prairie West the granary of the world. Having settled the Palliser Triangle, and having wrung from it over the past half century billions of dollars in new wealth which went to the building of this Nation, the obligation now rests upon governments to provide the descendants of those pioneers with all the help possible to ameliorate the problems of drought about which so little was known when the invitation to the homesteaders was issued. And water will help a very great deal in overcoming Nature's handicaps, whether it be the water in a P.F.R.A. dugout, or small farm reservoir, or the great water conservation and irrigation projects costing many millions. One eastern Member of Parliament, John R. MacNicol, who sits for Toronto-Davenport, and is a retired industrialist who has travelled thousands of miles in the West to see for himself Canada's vast store of untapped resources, gave a Lethbridge reconstruction committee his views on the Government's obligation to undertake this work when he said that Canada had spent over $600,000,000 in building canals and water navigation aids in Eastern Canada, and shouldn't be afraid to spend as much to use the waters of the Prairie Provinces to produce the commodities which will provide traffic for the eastern waterways, for the use of which shipping pays no toll.

Will irrigation, through increased production, carry the financial load of damming streams, creating reservoirs, building main canals and laterals to carry the water to the land, and the cost to the farmer under the ditch of applying the water to his growing crops?

That is the question which is the crux of the whole problem of spending money on post-war irrigation projects which have been conceived for the Great Plains. It has been fairly well answered in the United States, where such immense undertakings as Boulder Dam on the Colorado River, Grand Coulee Dam on the Columbia River and Fort Peck Dam on the Missouri River in Montana were built during the depression years by its Government and Reclamation Service to furnish water to thisty lands, to provide hydro-electric power and to control floods. But experience in earlier irrigation projects in both Canada and the United States—where the initial cost of irrigation water rights had to be written down, and sometimes cut in two, so that farmers on the land improved by the ditch could carry the load—leaves the question unanswered.

The answer seems to be that part of the cost should be borne by the country as a whole, and the rest by the farm lands and the farmers who reap the benefit. For, in the long run, the farmers do reap the benefit in increased production and in the raising of cash crops—which would be impossible without irrigation.

Take the case of the Taber Irrigation Project of some 25,000 acres lying about 30 miles east of Lethbridge. Here, in 1944, nine thousand acres in sugar beets returned to the farmers a gross of $1,003,000. This writer remembers when, early in the 1900's, he rode over that land rounding up horses.

In camp on the range; ranch-owner pours a cup of coffee for a neighbour who gave a hand at round-up. This is the Southeastern Alberta short-grass range country which pastures one cow to 40 acres, but whose soil is so rich when irrigated that it will produce $110 worth or more of sugar beets per acre, or up to $250 worth of strawberries, cucumbers or other canning crops.

When the beets are fully gr around September, they are of all ploughed out of the gr and loosened by a tractor (and then pulled out by wor

It was then cow range. The farmers were just beginning to take over from the cattle ranchers. It was what is known as short-grass country, most of it leased to the ranchers by the Dominion Department of the Interior at two to four cents an acre. One of the lease requirements was that the rancher should run one "critter" to 40 acres of lease—one head to 40 acres was the established carrying capacity over a term of years, through wet years and drought years, so that enough pasture would be left at the end of the year to reseed itself and maintain the grass cover.

It is commonly accepted as a fact in the range country that the rate of gain of beef cattle is 250 pounds per head per annum. That is the basis upon which the Alberta Government signs range leases with the stockmen to-day. It takes 40 acres of short-grass range, such as the Taber area afforded, to produce 250 pounds of beef in a year. On that basis, the 9,000 acres of Taber Irrigation project sugar-beet land, which in 1944 produced $1,003,000, would in its virgin state have produced 9,000 divided by 40 and multiplied by 250—56,250 pounds of beef. Allowing wartime prices for grass beef (ten cents a pound), the 9,000 acres, had it been in range grass and processed by beef cattle, would have brought the owner $5,625 gross, or 62½ cents per acre. With sugar beets under irrigation, it produced a gross return to the grower of $111.50 per acre. True, he spent $50, or probably $60, an acre to produce that return, and the beet land had grown in value to $75 to $150 an acre, but the fact remains that irrigation made possible nearly 200 times the per-acre return of that land in its virgin state.

Or, to put it in another way, it would have taken 1,604,800 acres of short-grass range land in use as a cattle ranch to produce as much gross revenue in a year as did 9,000 acres of the same land under irrigation and raising sugar beets.

And there are millions upon millions of acres of land in the Palliser Triangle which are just as level and would be just as fertile as the Taber land if the water could be found to impound and apply to it in the growing season.

Unfortunately, the waters flowing eastward out of the Rocky Mountains represent only a very small percentage of the total amount that would be required to irrigate all the land which might be irrigated in the Western dry belt. At best, probably not more than a couple of million acres could be brought under the ditch if dams and reservoirs and ditches could be built to store the flood waters of the melting snow and ice in the mountains and carry them to easily irrigable lands. The best that can be done is to use the available flood waters which go to waste to carry fingers of irrigation out into the dry plains to stabilize the agriculture which is established there. Many farmers would not want all their land under irrigation, even if it were possible to get the water rights. They do fairly well under dry-land farming, raising wheat and cattle, dairying and poultry farming—except in the drought years. Then they would pay a high price for a few acres of irrigated land to raise a good garden and some feed for their livestock; and

also, of course, to have—what is very important—a dependable supply of water for the ordinary needs of the farm. This would enable them to diversify at least to the extent of the cow, the sow, the hen and the garden, which, if the farmer in the wheat belt can maintain them, will make it impossible for drought to starve him and his family off the farm. It is these little islands of irrigation which the P.F.R.A. is now seeking to provide by means of dams and dugouts on the individual farm. These are the stabilizers when drought strikes.

It should be remembered that there are large areas in the Prairie West which get enough rain for from fair to good crops during the great majority of years. These areas are not interested in irrigation. There are other areas where the topsoil is underlaid with a hard stratum impregnated with alkali salts which, when the water table is raised (as occurs under irrigation), rise to the surface and make the soil useless. Thousands of acres in Western United States have had to be abandoned because of this handicap which irrigation sometimes brings. No such land in Western Canada should be irrigated, and the P.F.R.A. organization and the Provincial Departments of Agriculture are now making soil surveys so that the irrigation undertakings under consideration do not bring that calamity to any part of the irrigable West.

Another phase of the talked-of extension of irrigation in the Great Plains should not be overlooked. That is the damming of our streams and diversion of flood waters to great natural reservoirs which have been drying up in the past 25 years, since the breaking of the land for grain crops prevented the natural run-off from filling up these lakes. Buffalo Lake, near Stettler, Alberta, and famous Long Lake in Southern Saskatchewan, are threatening to dry up. Residents fear for the water table when these reservoirs are gone. Their restoration is greatly to be desired if farm water supplies are to be maintained.

Still another possible result of water conservation for irrigation extension might well be the use of water from great dams in the rivers for hydro-electric power. The demand of the farm population of the Prairie Provinces to-day is for rural electrification, making possible a higher standard of living and those amenities on the farm which would encourage the younger generation to stay on the land. Even navigation of the larger rivers, as in Europe, is spoken of as a possible outcome of a far-seeing plan for water conservation for Prairie use. This is not unlikely, especially in the event that the great water resources pent up in the Rocky Mountains at the western edge of the plains are considered for development as a whole—as was done in the Tennessee Valley under the T.V.A., and is now being suggested for the Missouri River from Montana to Minnesota. That is a vision which Canadian statesmen and engineers might well catch. So far as cost is concerned, the end result would be a productive and a fruitful West, much better able to withstand the ravages of recurring droughts than is the case to-day; and the cost would be but a tithe of the billions we have gladly spent to win a war, billions which can only be repaid by making the Great Plains of Western Canada bloom—as they will under irrigation.

Modern machinery speeds the beet crop from field to factory. A tractor is seen here hauling a special loading device down a row of freshly dug beets. Alongside is a second tractor towing a wagon to receive them.

"Ich Dien" — I Serve

by S. C. ELLS

PRIOR to the arrival of white men in Canada, the dog occupied an important place in the primitive transportation "systems" of native races. In spite of revolutionary changes due to increasing use of the aeroplane, he is still a helpful ally of whites and natives in northern areas during winter months.

With notable exceptions—as, for example, in the case of teams driven by Mounted Police and a relatively small number of private drivers—the lot of the train-dog is a hard one. Inadequate rations and brutal treatment in camp and on the trail are all too common. Nevertheless, in spite of such conditions, it appears that the great majority of dogs remain faithful to their masters.

On the ice and other open spaces of the Far North, various types of sledges are used. The writer's experience with dog trains has, however, been limited to the forested areas of Northern Ontario, Northern Manitoba, and Northern Alberta. In these areas, narrow winding trails necessitate the use of long trail shoes and toboggans. Trail shoes, as supplied by the Hudson's Bay Company, are commonly six feet long and two feet wide; toboggans—customarily of oak but sometimes of hickory—are 10, 12, 14 or 16 feet in length and 16 inches wide, and comprise two 8-inch strips, ¾ of an inch thick. The cost ranges from $12 to $28. The traces of the "wheel" dog are secured to a cross chain immediately behind the first cross

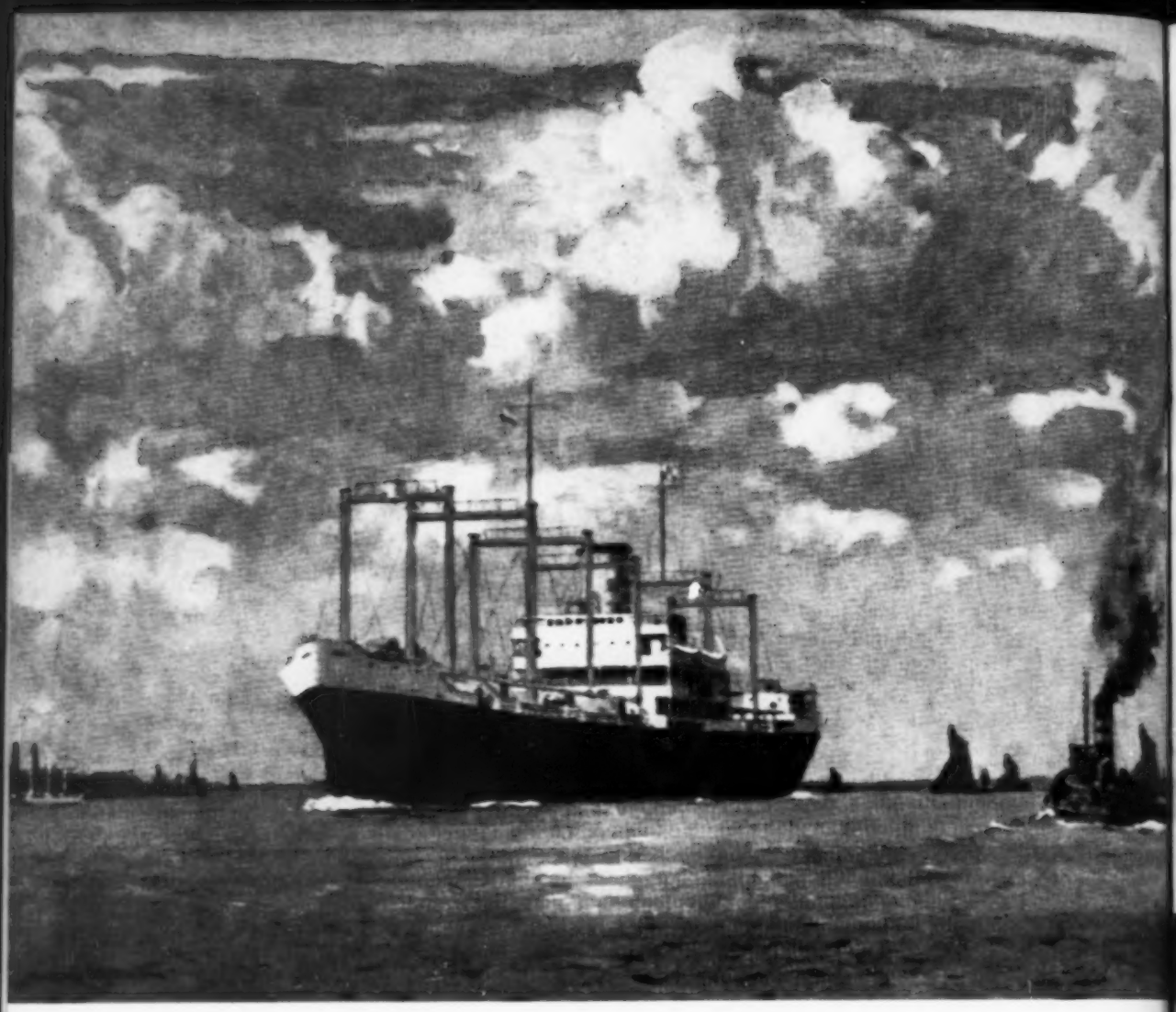
piece of the toboggan and lead to an extra flap some two inches long secured to the 3-inch back band. A metal ring attached to this flap facilitates attaching and detaching the traces.

When a toboggan is being loaded, a stout canvas is laid across it, the load is placed in position and the canvas folded over from the ends and sides. The covered load is then lashed in place, the lashing rope being secured to permanent lines which extend along both sides of the toboggan. Firm lashing is essential—especially on trails where the loads may capsize many times each day. In climbing or descending steep slopes, drivers and helpers may assist the dogs by using a line attached to the front of the toboggan and by a "gee" pole at the rear end. Incidentally, the true "husky" is rarely seen on trails in what may be termed the Middle North, and during three winters' experience in the handling of dogs the writer has had no animals of the "husky" breed. It may be noted that in connection with surveys for the Grand Trunk Pacific Railway, dogs used by the writer were a nondescript miscellany of animals recruited from various dog pounds.

Teams usually comprise from three to five dogs, and a team of five will haul from 350 to 450 pounds over average bush trails. Wherever possible, it is obviously an advantage to follow frozen streams, detours being made along the shores where "overflow" or actual open water is encountered. In the arduous work of breaking new trail, it is customary for the men to alternate in taking the lead. When the trail is on an ice surface, the man breaking trail usually carries a pole with which to test the strength of the ice.

On the assumption that feeding in the morning or at noon tends to make dogs lazy(!), many drivers feed their dogs but once a day—at night. As a result, half-famished teams are frequently lashed over bush trails from daylight until dark and in temperatures ranging from zero to 50° below. At night-time dogs commonly lie in the snow without shelter, although some drivers may throw down a few evergreen boughs as a "bed". No two-legged or four-legged animal ever more truly earned, in his respective sphere of activity, the right to use that time-honoured motto, "I Serve", than has the train-dog of the northern woods.

Across the wind-swept burnt lands,
Through murk of driving snow,
And down through white-walled valleys,
The dogs toil—all in a row;
Through biting cold and hungry days,
Breaking the solemn hush,
"Mush, Leader", echoes crack of whip,
And whip-lash echoes—"Mush";
And ever over weary trails,
With straining heart and nerve,
The train-dog earns a motto proud,
The honoured words—"I Serve".



The Influence of Geography on Import Trade

by DENIS HARVEY

THE INFLUENCE OF geography on international trade in primary commodities might at first thought appear to be a dry subject. There is, however, an aura of romance about a seaport and the ships which move through it, although some sense of perspective is needed even for this insight. There is a vast contrast between one's reaction to a heavily loaded freighter outward bound and lifting her nose to the first ocean swells, and one's reaction to a ship creaking at her berth as the clanking hoists swing cargo ashore or aboard to the background of box-cars being shunted through the yards.

The steamship, as it loads and unloads goods, forms a visible symbol of international commerce. It is a clear expression of the very meaning of foreign trade as being "Goods for Goods". A steamship service cannot pay its way when only obtaining revenue from bearing freight in one direction; it must have both homeward and outward bound freight. Nor can trade continue to

At top:—Norman Wilkinson, notable marine artist, has reproduced on canvas the above nautical scene, featuring one of the Canadian Pacific "Beaver" class cargo liners, operating between Canada, the United Kingdom and Continental ports.

Bananas are imported into Canada in large quantities from Jamaica. These bunches weigh 101 and 130 pounds respectively.

exist when flowing in only one direction; eventually something must be returned in exchange.

The real life-blood which circulates through the channels of international trade is the traffic in staple commodities: the products of the wheatfields, the cane plantations, the forests, the coffee plantations, the tea gardens and the mines. These are the cargoes which fill the holds of the ships, the basic paying freights that make commerce possible. These are the goods which provide the farmer, the planter and the miner with money to buy manufactured goods and foreign-grown foods. To appreciate the significance of this, consider the importance to Canada of wheat, lumber, newsprint, copper, lead, fish and fruits. One realizes that the same dependencies exist for others when one thinks of the West Indies and sugar, of Colombia and petroleum, of Chile and nitrates, of British Guiana and bauxite, of Argentina and beef, of Peru and cotton.

This dependence of the various countries on their exports of staple goods has other aspects which are important to Canada. The trade statistics of Brazil for the last peacetime year reveal that coffee and cotton represented almost two-thirds of the total value of Brazil's exports in 1938. Putting that in another way, it means that Brazil's ability to buy and import goods from abroad was 63 per cent dependent on the price of coffee and cotton. Brazil is a good customer of Canada, but during the last twenty years the price of cotton on three occasions has been halved within eighteen months, and the price of coffee on one occasion was halved in eight months. Canada's memory of what has happened to wheat prices needs no refreshing. In foreign trade, though not necessarily one's brother's keeper, one is nevertheless vitally interested in his welfare.

The basis of this interdependence in trade between countries lies, of course, in the differences of climate, of terrain, of density of population, and of facility of manufacturing and transportation, which create the necessity for exchange of goods for goods; i.e.,

Sugar, with molasses and rum, is brought in from Barbados, where it is also popular with coloured residents of this Caribbean island.

Aerial view of the port of Montreal, from which Canadian products go forth to many corners of the world, being exchanged for raw materials and other manufactured goods.

Courtesy Canadian Pacific Steamships

international trade in staple commodities. Commercial production of oranges, coffee, cotton and sisal is impossible in our northern continental climate. Vegetable waxes, latex, varnish gums, and quick-drying vegetable oils are products we require from more tropical climates. We are deficient in certain mineral metals, such as tin and antimony. We import non-ferrous ores. On the other hand, we ourselves need export markets for our own products—those best suited to the Canadian climate, and which are provided in quantities far in excess of our own domestic needs.

Much is being written on the necessity of increasing the volume and value of international trade to higher levels than ever before experienced. It is obvious, from memories of the decade before the war, that a high and stable level of such commerce is essential to a high level of employment and prosperity. Some of the lessons of that period are fresh in everyone's mind. Yet, while the necessity for expanding international trading seems obvious, the means may appear obscure. Such conditions as the fertility of the soil, the climate, the availability of power or fuel, the skill of the tradesman and the facility for moving goods to market, at first glance appear to be foundations which are inflexible; and, therefore, as business is to-day, so it will be in the future. This, however, is the limited vision of the moment only, for even within the span of one man's life it is proved untrue. There is nothing static about international trade; it is a continuous process of evolution.

To appreciate the great flexibility and capacity for change of Canada's economy, we need only look at the constant expansion and change of the past. At the outset of western civilization in Canada, fish was exchanged for salt, and the products of the forests, principally furs, were exported for

foods and tools and to meet other growing needs of the young community. As the latter developed, the products of the wheatfields and farms in the St. Lawrence basin helped to finance the purchase of the increasing variety of imports needed to meet the insatiable appetite for expansion. Later, hard wheat came into the picture as the wheatfields were moved farther west and coal and iron ore allowed the development and enormous expansion of the railway systems. Then, as hydro-electric power came on the scene, industrial activity spread into the non-ferrous field, into the chemical field; the form in which forest products were exported changed to newsprint, craft pulp and cellulose end-products. A tremendous influence on this change, of course, was the development of speedier ocean transportation, which brought overseas markets nearer to Canada and made available an increasing supply of imported materials.

It is reasonable to expect that Canada's future holds possibilities for as great a change in her economy as the past has shown. Indications of potentialities are plentiful: concentration of attention on the development of our Northlands is increasingly evident; air transportation makes steady progress.

The underlying strength of Canada's economy, which lies in cheap and plentiful hydro-electric power, is as indestructible as the land itself. The great northern forests of the Precambrian Shield, and the winter snows are the origins of this power supply. In view of the local availability of that power and the relatively high costs of its transportation over any considerable distances, the raw materials must come to the power, even though the skills which convert them may be mobile. Thus, the geography of the North is responsible for our bringing sulphur to Canada from the Gulf of Mexico for newsprint and sulphite manufacturing. It also necessitates bringing bauxite from the Guianas for the aluminum industries; other

London Bridge, in the heart of the great port to which Canadian commodities are carried, providing Britain with foodstuffs that cannot be produced in sufficient quantities at home.

Courtesy Canadian Pacific Steamships

Top centre:—Tropical scene in the Caribbe
Photo by S. J. Hayward, Montreal

Left top:—St. Vincent, B.W.I.
Photo by S. J. Hayward, Montreal

Left centre:—Coffee, in Brazil

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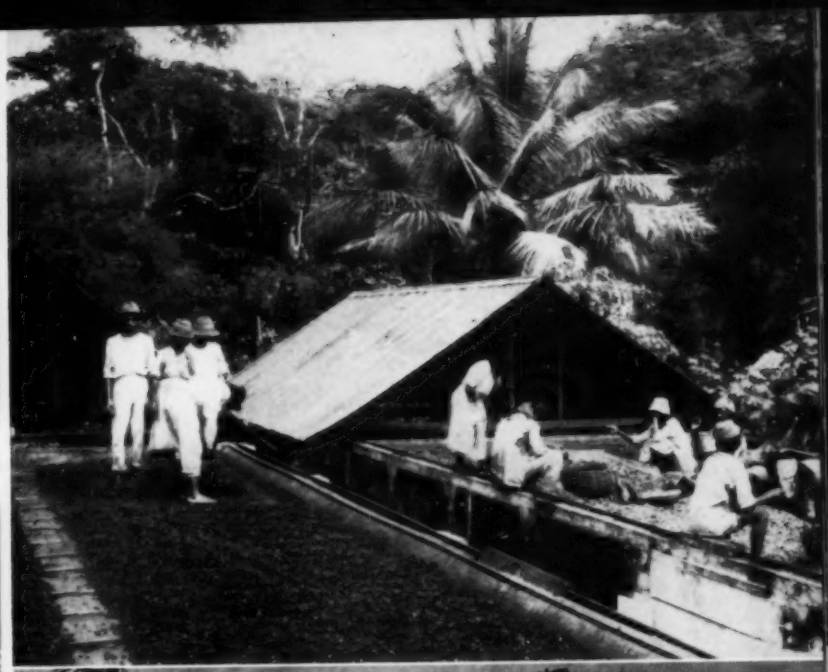
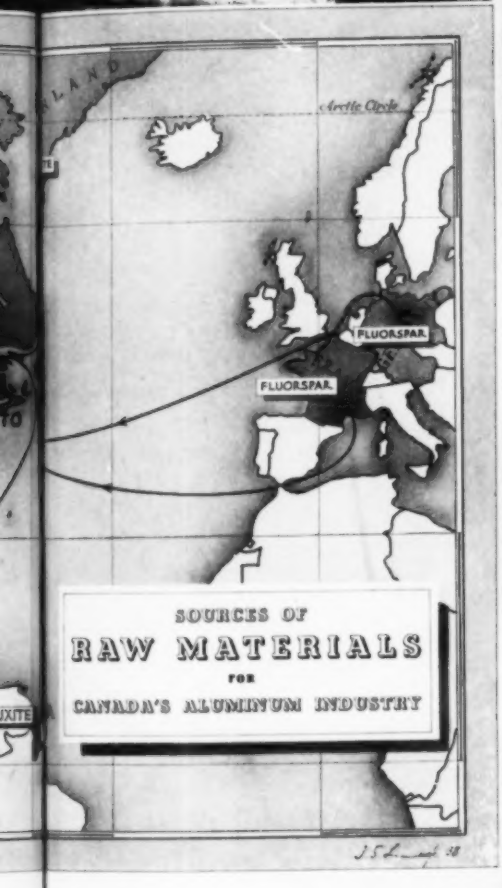


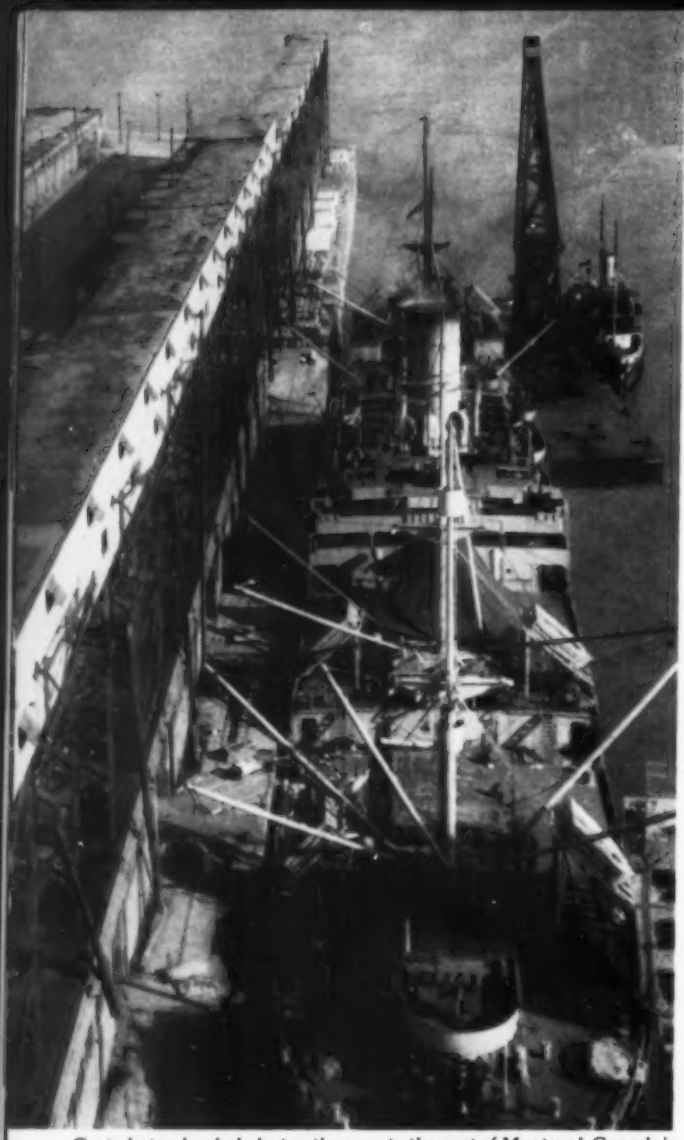


Left bottom:—Grenada, B.W.I.

Right top:—Drying cacao in Trinidad, B.W.I.

Right centre:—Sugar factory in Barbados, B.W.I.
Photo by S. J. Hayward, Montreal

Right bottom:—St. Lucia, B.W.I.



Grain being loaded, during the war, in the port of Montreal. Canada's wheat production for 1946 was estimated in September at 440,567,000 bushels, which exceeds the 1945 crop by 135,000,000 bushels. The peak was established in 1942, when 556,684,000 bushels of wheat were threshed. Courtesy Canadian Pacific Steamships

ores are brought to feed the non-ferrous metal industries and phosphate rock to feed the chemical and fertilizer industries.

These expanding industrial communities create new local markets for other industries to serve with foods, clothing, building materials, etc. Skills breed new skills, as Canada's wartime production proved. There is still a continuous growth in developed resources, in manpower, in industrial capacity and also in markets.

It might appear that the development of new industries in Canada must reduce the dependence on imported goods to meet consumers' requirements. If that is true, then what will happen to export trade? It is palpably obvious that all the nations in the world cannot enjoy a favourable trade balance at the same time, each exporting more than it imports, for where is all the export surplus to be absorbed! That recalls the mentality that led to the struggle for self-sufficiency in the decade before the war. There is, actually, a fundamental fallacy in the first premise, for new industries increase the requirements for imported materials, and higher living standards increase the amount and the variety of the demand for consumer goods.

During the war, when shipping losses were at their peak, every ton of cargo space in ocean-going steamships was at a premium. At that vital period, when future victory hung on the issue of production and trans-

Three "Lady" lin of the Canadian tional Steamship Hamilton, Berm before the war. Lady Nelson, in foreground, was ployed as a hosp ship during the pe of hostilities. Th ships contribut much to Canad trade with Berm the British West Ind and British Guian

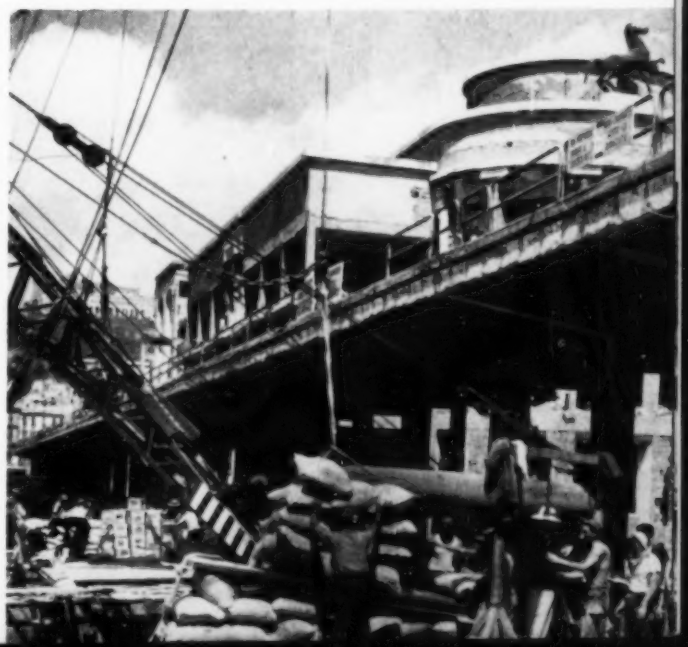
Courtesy W Ruther

pping scene in dgetown, capital Barbados, which is gely dependent on nada as a market her principal prod- sugar.
Courtesy Canadian National Steamships

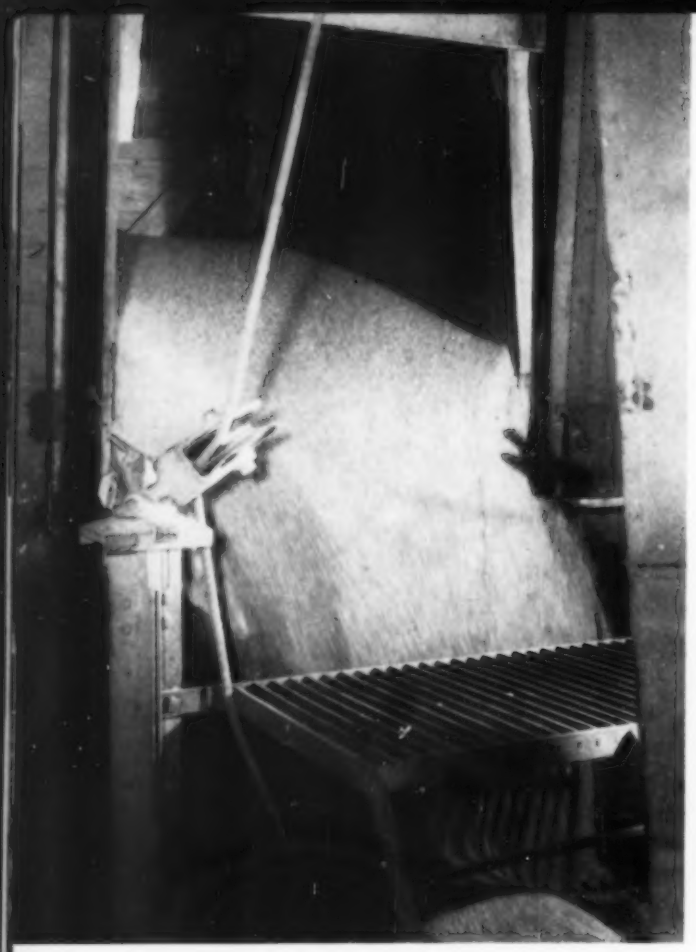
portation, only absolute essentials were carried, and yet Canada then required 500,000 tons' capacity to be allocated for her use from Latin America alone, without counting further tonnage needed for movement of bauxite and petroleum; and at that time all cotton used in Canada was being drawn from the United States. Among the imports comprising the minimum requirements from Latin America to meet our wartime needs, were such commodities as manganese ore, castor oil, vegetable waxes, coffee, tanning materials, cotton-seed oil, iodine, ivory nuts, cocoa, nitrates, hemp, balsa wood and cassava; these cover between them an extremely wide range of industrial applications. They are materials which cannot be produced in Canada and for which no suitable substitutes were available. They were essential in wartime, and may well be in even greater demand with peacetime expansion of our foreign trade.

The expansion of industry in Canada increases dependence upon imported goods in many ways. There is hardly one major export industry which is not at least partially dependent on such materials, for the range of the Canadian climate is relatively narrow and it is primary production which is the controlling factor. For example, Canada does not produce and must import carnauba waxes, sunflower-seed oil, bristles, piassava, oiticica oil, rotenone, nitrates, corn, manioc root, essences, crude drugs and tagua nuts. Illustrating the complexity of industrial needs, these commodities are required for the production of varnishes, paints, polishes, brushes, brooms, soaps, shortening, insecticides, fertilizer, stock feeds, alcohol, food products, medicines, toiletries and buttons. This list represents a small proportion of Canada's imports from Latin America alone, and even from that source the variety of requirements is so great that a moment's reflection will double the size of the list given.

This dependence on imports is all-embracing. At first one might wonder where Canadian agricultural production needs materials from



Canadian produce, including 2,340 tons of flour, 1,500 tons of oats, 786 tons of canned meats, 239 tons of macaroni, 113 tons of agricultural implements and 1,100 tons of asbestos, being unloaded in Naples.
Courtesy UNRRA



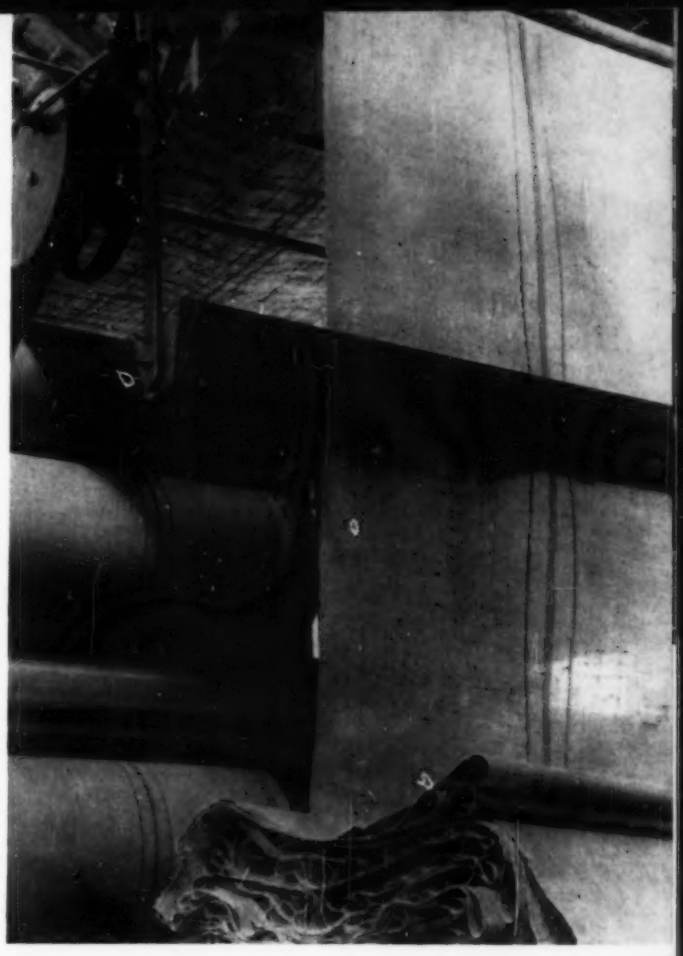
Grain being unloaded from a freight car in Montreal for subsequent shipment overseas.
Courtesy Canadian Pacific Steamships

foreign sources for its own support. Yet the petroleum which drives the tractors and combines is largely imported. Nitrates and phosphates are needed for fertilizer. Indian jute and American or Brazilian cotton are needed for bagging grain and the flour. The tanning of domestic-grown hides consumes quebracho extract. Tin is essential for canned fruit and vegetables. And many commodities are transported to market by the locomotive power of imported coal.

In the broad range of manufactured goods, the influence of geography and climate is less direct, but man's tastes and appetites are well described as "infinite and variable". The textile plant manager may well clothe himself in imported English quality worsteds. The export agent handling bottles or broadloom carpets may highly appreciate Belgian crystal-ware or Persian rugs. The silversmith's wife may sport Mexican or Peruvian handicraft ornaments. On the table all seek the widest choice in season or out. The needs, tastes and appetites of Canadians bring in a variety of goods which is immeasurably greater than that which is produced in Canada—for she has the whole world to draw on.

Large shipment of Canadian fish in the refrigerated cargo space of a Canadian Pacific "Beaver" liner.

The complexity of international trade and the mutual interdependence of all trading nations has become more than ever apparent since the war, owing to the shortages in world supplies which have developed. It would seem unimaginable that famine conditions in India could actually hamper the supply of Canadian-grown food to Europe. In reality, though, if agricultural acreage has to be diverted in India from jute to food production, difficulties will automatically be created in obtaining container materials in which to move the Canadian food. The cycle of repercussions from any major changes in production practices anywhere in the world is extensive. Both competitive industries in producing countries and dependent industries in consuming countries cannot fail to be affected. Then again, in the transactions of international commerce, a vast variety of businesses is concerned. Between the primary producer and the eventual consumer come the commodity broker, the booking agent, the shipping and marine insurance agents, the warehouse, the forwarding agent, the railways, the manufacturer and all his distribution agencies. A dam or a spate anywhere in the



Brazilian jute makes the sacking in which part of Canada's wheat and flour is shipped.

A tea plantation in the vicinity of Darjeeling, India, which exports this product in large quantities to Canada and other countries, providing for the purchase of various commodities in exchange.

stream affects the whole level of the river. In international commerce, as in international politics, this is one world.

Looking ahead, one can already see, even in the face of to-day's shortages, that the time will come again when our major problems will include the prevention of large commodity surpluses, with the resulting collapses in price which have proved so destructive in the past. Glancing back at the history of wheat prices, Canadians can clearly appreciate that the buying power which supports good business ultimately depends on commodity prices. There are hopeful signs in that, on every hand, a very much greater importance is to-day being attached to the relative stability of prices for staple goods. It is also noted that the major surpluses which already exist as a threat to prices (e.g., wool) are being recognized by the governments concerned as endangering trade, and that attempts are being made by these governments to tackle the problems involved in a realistic manner.

The obvious answer to any threat to commodity prices arising from undistributed surpluses is, of course, the expansion of international trade and employment—and this is the object of the "Proposals for Expansion of World Trade and Employment", which have been put forward by the United States Government. These proposals are directed towards the establishment of an International Trade Organization and the development of a high degree of intergovernmental collaboration on these problems.

Top:—Branch of a cacao tree, showing pods from which cocoa is obtained. Photo by Thomas' Studio, Trinidad

Centre:—Rubber products from a Canadian factory

Bottom left:—Drying and packing raw rubber in Brazil.

Bottom right:—Sampans in Canton, South China

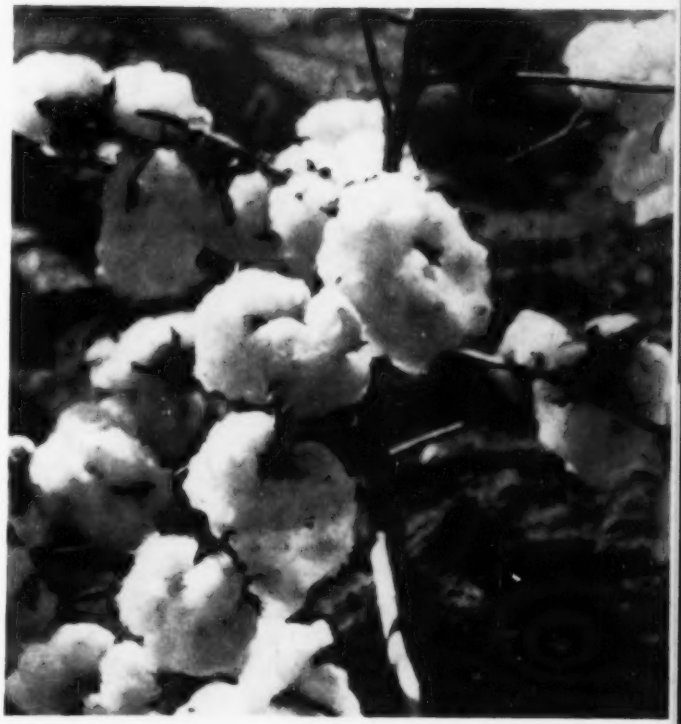
Right:— Busy scene at Port Elizabeth, South Africa, to which Canadian commodities are shipped.

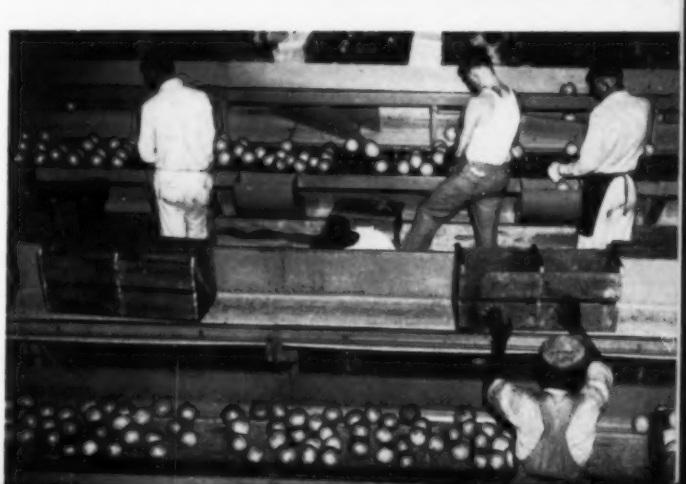
Right centre: — Cotton, from Brazil, is imported by Canada in large volume.

Right bottom:—Packing citrus fruit in Florida for Canadian consumption.

The map below illustrates valuable markets and sources of supply in Latin America.

Her geography and her climate, exploited by her people, are responsibile for making Canada one of the leading international trading powers in the world. We import in order to export. We export in order to pay for imports. It is the same either way, and the best means we have for maintaining and raising further our own standard of living is the promotion of a high and stable level of foreign trade.



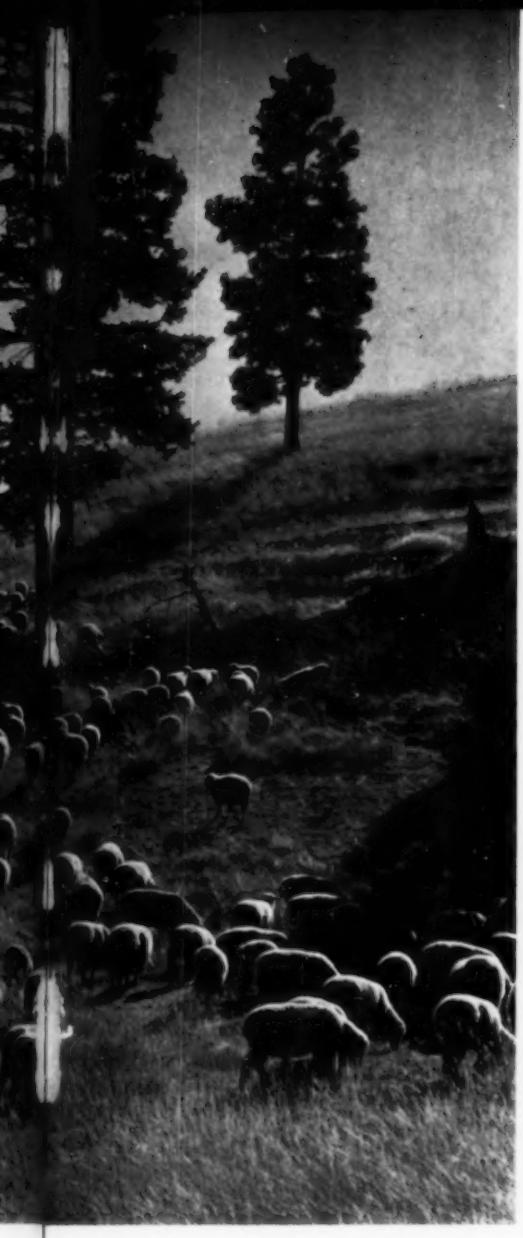


The Canadian Woollen and Knit-Goods Industry

by S. G. COOPER

LAST winter a mechanized unit crossed the Canadian Arctic from Churchill to Edmonton. It was one of the most severe tests of men and machines ever attempted in Canada. Operation Musk-ox also added another chapter to Canada's already extensive knowledge of efficient cold-weather clothing. Behind the job of equipping troops for the Arctic winter were more than two centuries' experience in making blankets, uniforms, suits and knitted goods that would withstand Canada's extreme changes in temperature and satisfy Canadian style standards.

At top:—Sheep grazing—Western Canada.



Many of the Canadian woollen mills which supplied both soldiers and civilians during the recent war were already established by 1885. Prior to that, the homespun industry, which began early in the French régime, took care of the bulk of the population's needs. Canada's woollen industry is almost as old as the first settlement.

In 1671, Jean Talon wrote that he could clothe himself from head to foot in garments made in New France; and even at this date a native textile art was developing that was to contribute distinctive characteristics to Canadian design. The most notable example of the period was the *ceinture fléchée*, or arrowed sash, worn by trappers, hunters and explorers. It was a sash, 8 to 10 feet long, into which was woven an arrow design, which often signified the fur-trading company to which the wearer belonged. To-day the best examples of this early Canadian art are valued at hundreds of dollars.

In the days of the French régime and the early English settlers, yarn was made in the home on the spinning wheel and cloth was woven on hand looms. A woman at a wheel could spin only from 1½ to 2 pounds of yarn a day, yet the homespun industry in Canada produced amazing quantities of cloth. At the height of this industry in 1871, over 7½ million yards of cloth were produced in Eastern Canada in a year.

The organized manufacture of textiles in Canada began in the early years of the nineteenth century. The first census of the woollen industry in Canada in 1827 showed that there were 91 carding and 70 fulling mills in Lower Canada (Quebec), and in Upper Canada (Ontario) in 1842 there were 186 carding and 144 fulling mills. These mills, which performed the first operations of cleaning and carding the wool, were usually operated in conjunction with a grist mill or saw mill. They were the first step in the conversion of the woollen industry from home to factory.

The manufacture of cloth on power looms in Canada dates back to about the time of the Rebellion of 1837, although in 1827 a mill was started at L'Acadie, Quebec. In Ontario, a complete woollen mill was supposed to have been started in 1820 by the Hon. James Crooks, near Georgetown. This mill was later moved to Streetsville, Ontario. By the middle of the nineteenth century there were about 350 carding and fulling mills and about 250 establishments where weaving was done were in operation.

A knitting industry did not begin in Canada until 1857, when W. E. Adams brought knitting machines from England and settled in Belleville. Although man has had a knowledge of weaving since he was a

Examining and sorting fleeces. National Film Board photo

cave dweller, knitting is a fairly recent invention. Knitted stockings were not in general use even at the beginning of the sixteenth century. Only the rich could afford them. Poor people used bandages or went barelegged.

Henry VIII wore knitted silk stockings brought from Spain, and later Queen Elizabeth added black silk stockings to her fabulous wardrobe. These were full-fashioned stockings, as circular knitting was a later development.

During Elizabeth's reign a clergyman named Lee came to her with a knitting machine that made full-fashioned hosiery; that is, hosiery which is made flat and later seamed together to produce the tubular stocking. Although Elizabeth accepted a sample of Lee's work, she would not lend her support to his invention on the grounds that it would cause unemployment among hand knitters. Lee subsequently took his invention to France, but met with little more success than he had in England. He died in poverty.

Two centuries later, in 1798, the circular knitter was invented by Jean Descroix in France. Canada, therefore, was not far behind Europe in establishing this new invention in its own factories.

By 1859 a firm in Galt, Ontario, was knitting full-fashioned woollen underwear. Other mills were established at Ancaster in 1859 and at Paris, Ontario, in 1870.

During this period of industrial development there was a steady tendency in favour of factory-made goods, and those mills making cloth had salesmen going about the country, often from farm to farm, trading

National Film Board photo

This machine, known as a picker, opens up the wool fibres and blends them.

the cloth for wool, farm produce, grain or money—the latter quite rarely, as it was a scarce commodity in those days. This trade induced mill-owners to install power looms, and many of the custom mills put in manufacturing cards, jacks, and looms and turned out coarse tweeds, étoffes, flannels and homespun, as well as doing the custom work.

By 1885 most of the present-day woollen mills had been established, and the custom mills, of which there were approximately 1,000, began to disappear as preference for the products of the larger and more enterprising mills developed.

In the depression following the grant of a preferential tariff to British woollens, more than 150 mills were compelled to close between 1897 and 1907. Any expansion which took place during this period was chiefly in the manufacture of knitted goods.

At the beginning of the century there were already a number of knitting mills in operation, and many of the woollen mills had established knitting departments, manufacturing hosiery and underwear. During these years knitted goods became increasingly popular, and there was decided progress in the production of knitting machinery capable of manufacturing better goods and a much wider variety. During the decade 1900 to 1910 the knitting industry developed soundly and added new machines as the technique of the industry advanced. As the initial cost of equipment was comparatively small, the industry was able to start and maintain specialty plants.

The drum of this worsted card is set with teeth which remove foreign matter from the wool and lay the fibres parallel. At the right a sliver starts on its way to become yarn.

Slivers of wool being drawn into a washer.

In this intersecting gill box the wool fibres are drawn out as straight as possible for combing.

The noble comb ensures uniformity in length of fibres by removing short ones from the wool.

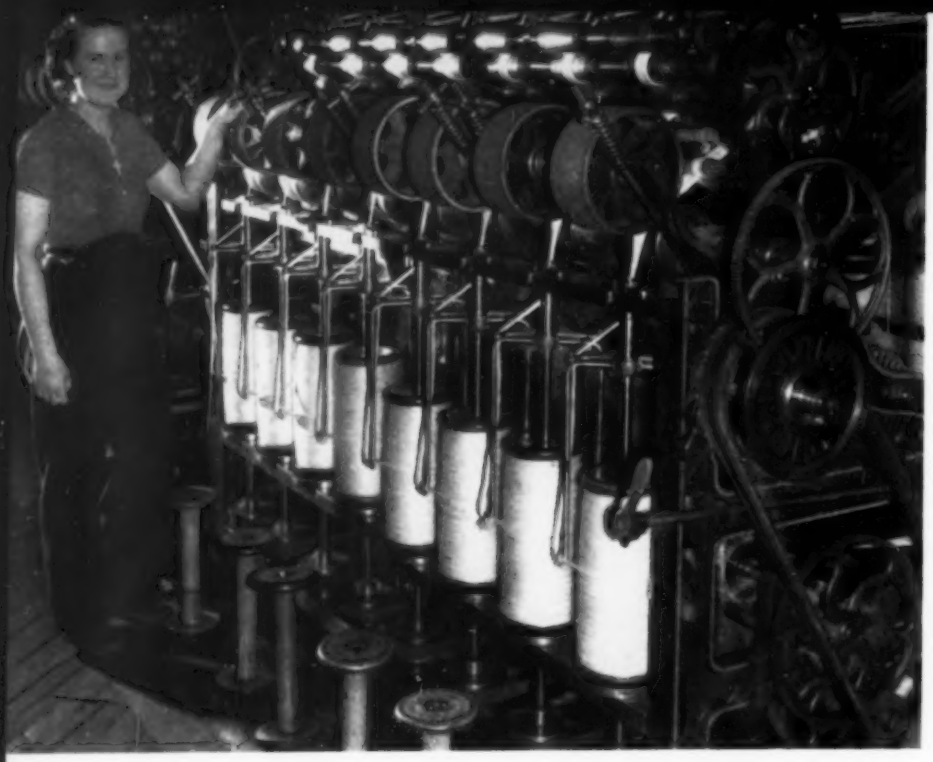
A gill box winding wool into tops. Each finished top weighs 61 pounds.

National Film Board photos

During World War I the whole of the woollen and knit-goods industry underwent a huge expansion. War clearly demonstrated the necessity of a substantial home industry both for the purpose of equipping troops and for maintaining civilian supplies when trade channels were disrupted.

At the close of the war, owing to improvements and expansion, the industry was comparable to the best in the world. Aldred F. Barker, Professor of Textile Industries at the University of Leeds, who toured Canadian mills in 1919, remarked that: "Upon the whole, Canadian wool mills come up to the best Yorkshire mills; some few Yorkshire mills are better; many are very much worse."

Knitting establishments also improved during the war years, and it was reported by the Department of Trade and Commerce in 1922 that: "On the whole, the knitting mills are exceedingly well equipped with the most modern machinery, several ranking among the most modern in point of plant and equipment in the world."



A roving frame. This is one of the drawing and twisting operations through which the wool goes on its way to become yarn.

A vital factor in improving the quality of woollen and knit goods during the period of this industry's development was the improvement in the quantity and quality of wool. So vital has the sheep been in the development of modern society that great attention has been given to breeding strains which produce more and better wool and at the same time remain a good animal for eating. At one time a Merino Society was formed in England with 57 vice-presidents. During that period sheep were bred with wrinkled skin on the theory that a larger skin area would produce more wool. Since 1885, the weight of wool taken from a single sheep has increased from about 5 to between 7 and 8 pounds. There is no indication that this is the limit, as improved strains are still being produced.

To-day there are 22 countries producing 200 breeds of sheep, from which the hundreds of grades and qualities of wool are secured for purposes ranging from carpets and paper makers' felts to the finest garments. In Australia alone, wool is graded into 800 different classifications under government standards.

The development of the woollen and knit-goods industry between the two wars was steady, marked by neither heavy setbacks nor rapid advances. What is of considerable importance to Canada is the fact that the industry has never responded, as many another industry has, to the modern economies of large-scale production in a few huge units. As a result, woollen mills and knitting factories were located in 154 different Canadian municipalities in 1938, and to-day are represented in every province of the Dominion.

This distribution of the industry in small units over the countryside makes for closer co-operation of farm and factory in support of national life. It is of value in providing a more diversified and a happier social life, as well as in the economic sense.

Such a widely scattered industry brings responsibilities with it. Many a village or town is almost wholly dependent on its woollen mill or knitting factory. It is vital to these communities that this income remain uninterrupted.

Because of the essential nature of its products, the textile industry, of which the woollen and knit-goods industry forms a part, was the first to show recovery after the depression. Thus, in the years following 1930 the industry moved against the general trend, and formed the backbone of manufacturing employment.

In the recovery years, during which all other manufacturing industries came back

This worsted spinning frame draws and twists strands of wool into yarn. It performs the same action as the ancient spinning wheel, only with far greater speed and efficiency.

only to the 1930 level, the woollen and knit-goods industry provided employment to some 20 per cent more workers than in 1930. This was due to the fact that woollen and knit goods are essential commodities and their replacement cannot be put off too long. The very nature of their continued necessity gives a stabilizing effect to a country's industrial and employment life.

While woollen goods are essential in peacetime, in war they are almost as necessary as guns and ammunition. Well aware of the demands which war would make upon their products, members of the woollen and knit-goods industry organized quickly and efficiently. On the day war was declared their representatives approached the Government, urging the organization and control of all civilian and military wool supplies. One week later a committee, backed by the entire industry, offered its services to the Defence Purchasing Board. The offer was accepted and, with the co-operation of wool dealers and suppliers, a survey of the entire industry was undertaken.

A Military Cloth and Blanket Committee allocated production and arranged for the pooling of technical information. Specifications were submitted to R. C. Vaughan, Chairman of the Defence Purchasing Board, and approved. Seventeen days after war broke out, without formal contract or the scratch of a pen, hundreds of thousands of dollars worth of raw materials were in production. Formal orders were not received until October 20, 1939, by which time cloth had already been shipped from some mills.

Cloth was produced not only for the Canadian fighting services but also for the navy and army of Great Britain. It was sent to Russia, too, and certain technical munitions cloths went to the United States. A total of 11,500,000 yards of military cloth,

Yarn being drawn from a warping creel. These strands form the warp, or lengthwise threads of the cloth.

A loom in operation. Canadian mills are among the best in the world from the standpoint of modern machinery.

Inspecting finished cloth.

or one-fifth of Canada's military production, was sent to Great Britain.

During the war the industry produced 38 different wool cloths for military purposes and seven types of blankets. From the outbreak of war to the end of 1945 it turned out 55,557,000 yards of military wool cloth—sufficient to wind a woollen belt more than 2 yards wide completely around the world. In the twelve months of 1943 the industry supplied 6,873,288 pairs of military socks and stockings, 5,315,000 pairs of military undergarments, and vast quantities of sweaters, mufflers and gloves.

The total yardage produced in Canada during those years for both military and civilian use was approximately equal to

Cloth passing through the shearer, where cylindrical knives, like the blades of a lawn mower, trim the nap to proper size.

total peace-time consumption. In other words, the Canadian industry demonstrated that it could supply the whole peace-time market for Canada.

Despite the best efforts of Great Britain to remain in the export market, imports into Canada from that source dwindled from a high point, in 1940, of over 14 million yards of woven woollen fabric and fabric containing wool to a little more than 8 million yards at the end of 1945. The loss to the Canadian consumer was taken up by increases in Canadian production to such an extent that if the 6 million yards of material which was made for military purposes in 1945 had been available for civilian consumption, it would have provided Canadians with more woollens than they had in 1940, at the peak of Britain's export trade.

The high productive capacity of the woollen and knit-goods industry demonstrated during the war years was not a mushroom growth resulting from the exigencies of war. It was already a large, efficient and well-equipped industry at the outbreak of war, capable of supplying almost

Cloth being handled for comparison with a standard sample.

any fabric required by the Canadian people. From its early habitant beginnings, almost two and a half centuries ago, it had grown steadily in importance, contributing more than most industries to the development of the country. In 1939 the industry was operating 326 establishments located across Canada, but chiefly concentrated in the provinces of Ontario and Quebec. These establishments represented a capital outlay of over $100,000,000, about 85 per cent of which was Canadian owned.

Slightly more than half of the employees in the industry in 1939 were women. In our modern economy much of the work of furnishing and maintaining a home, which was previously done by women in the household, has been transferred to factories, and employment must be found for women who must work, because either they are self-supporting or have to supplement the family income. A light industry, such as the manufacturing of textiles, forms a necessary counterbalance to the heavy industries which employ men only.

The wage rates paid by the industry were in line with the high standard of living which Canadians enjoy. The International Labour Office at Geneva, reporting on the textile industry in 1937, said: "When the wages paid in different countries are measured on a common gold basis, the textile countries fall into three main groups: (a) a 'low wage' group including China, Japan and India; (b) a 'medium wage' group including Central and Western Europe, and (c) a 'high wage' group composed of the United States and Canada."

Great Britain was the highest in the "medium wage" group. With regard to a comparison between wages in the woollen industry in Great Britain and Canada, the Canadian Tariff Board reported: "It has been established that hourly wages in Canada exceed those paid for corresponding occupations in the United Kingdom, by 55 to 60 per cent in the woollen industry, 76 to 78 per cent in the worsted spinning industry, and 65 to 75 per cent in the worsted weaving industry."

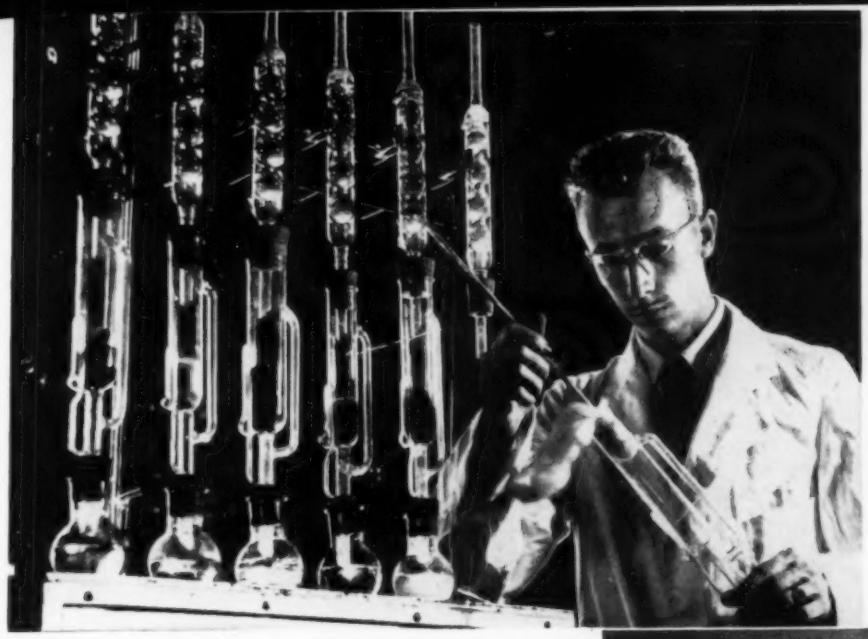
Because of high wages Canadian mills cannot enter into the production of cheaper materials, and because of a smaller market they cannot produce specialty or novelty fabrics to any great extent. Between these two extremes the Canadian industry produces much of the fine woollen and worsted material worn to-day, and there is little reason why it cannot continue to supply domestic needs with all but specialty fabrics.

Many myths have grown up concerning the conditions of climate and type of water supply which have supposedly made certain historic weaving centres unique in the world. Modern air conditioning and chemistry can, however, produce a uniformity of atmospheric conditions and water supply in a modern plant that nature would find impossible to duplicate, although there is a considerable portion of Canada so fortunate in climatic conditions that even in spinning and weaving no special arrangements, other than those made in Yorkshire, for example, are adopted. Writing on this subject, Professor Barker stated: "There may be a greater difference between the valleys and hilltops in Yorkshire, so far as spinning atmosphere is concerned, than there is between Yorkshire and Canadian mills."

Canadian mills are using machinery and equipment which is the finest available to-day, whether made in Great Britain, the United States or Canada. Machinery is universal, and Canadians are well aware of the advantages to be gained by using the most modern equipment.

Another major factor contributing to the success of any industry is the skill of the workmen. Great skill in any industry can be achieved by a healthy, intelligent and adaptable people, and the workers in Canadian mills are as intelligent and skilful as others anywhere in the world, and are actually better educated, more adaptable and more versatile than most. In both employees and employers the industry desires the sound quality which is Scotch and English, the flair for style which is French, and the ingenuity and persistence inherent in a young and vigorous nation.

The stability which this industry gave to



Quality, once controlled by master craftsmen who relied on experience alone, is now accurately measured in the laboratory. Here a chemist is testing samples of raw wool for grease.

the hundreds of communities in which it was located during the depression years, and the essential services which it gave to the country during two great wars, have made it an important factor in our economic life.

Because of the rigorous Canadian climate, warm clothing of distinctive Canadian design will always be essential. No natural or artificial fibre can replace wool in fulfilling this purpose, nor does it seem probable that a man-made fibre will be devised to duplicate the intricate structure of the wool fibre. Woollen fabrics will remain as much a part of our everyday life as will leather and wood and paper.

In the control laboratory of a Canadian mill this wear-test meter aids in maintaining quality.

Samples are exposed to brilliant sunlight to test for colour fastness.

"Heina", by Emily Carr, R.C.A.
From the collection of the National Gallery of Canada

Emily Carr—Painter of the West Coast

by DONALD W. BUCHANAN

IN HER PAINTINGS, Emily Carr, one of Canada's most independent artists, has transcribed for us, in personal and expressive terms, the brooding majesty of the immense forests of British Columbia. Her finest work was a combination of individual painting and of a deep inner understanding of the atmosphere and landscape of the Pacific Coast.

Born in Victoria in 1871, Emily Carr died there in 1945. Besides her paintings, she is remembered for several books of original and finely written essays.

In her younger days, she travelled widely and studied in the art schools of San Fran-

cisco, London and Paris. Yet even then, at intervals, she kept returning home. Often she journeyed (by canoe and packhorse) and dwelt alone among the Indian tribes of such remote areas as the Queen Charlotte Islands and the Skeena district of the mainland. The paintings she produced in those earlier years were objective studies; she said of that period, "I took no liberties, I worked for history and cold fact".

It was not until she was well into middle age that her more powerful work appeared. This followed upon a long period of frustration, when she had given up teaching art and had almost forsaken painting. During all those difficult years, her talents were almost completely ignored by her fellow citizens in Victoria. Yet she continued to sketch during the summer months, and by 1927 had produced enough interesting work to attract the attention of Eric Brown, then Director of the National Gallery of Canada, who arranged to have some of her paintings shown in Ottawa. This recognition, coupled with her discovery, on a trip to Toronto, of the Group of Seven, whose work she then saw for the first time, marked the turning point in her career.

Her early, less expressive, style changed, and, beginning to paint steadily once more, she soon arrived at a position that was roughly on the fringe of the Group. By using a sort of covered trailer or van outfitted for housekeeping, Emily Carr was able, after 1933, to go camping whenever she wished at the edge of the forest. There, in the shadow of some immense grove of evergreens, she used to spend her time "painting with great rapidity all day and, at night, closed up in the solitude of the van, reading Walt Whitman and writing".

What she brought to her painting during the last fifteen years of her life, she found mainly within herself, using her sketches of the giant trees more and more as mere points of references; the emphasis now was upon the translation of her own moods and spirit into individual compositions on canvas.

In some of her greatest canvases of this period a note of foreboding appears, in which both awe and fear of nature seem to mingle. This can be seen in paintings such as "Indian Village", with its white church overshadowed, submerged as it were, by the giant columns of spruce and fir.

We need only read Miss Carr's own writings to find, in addition, what primitive meanings attributed to nature she attempted to call up in her work. As literature, her interpretations of Indian legends and her accounts, realistic but weird, of the life and the unspoken dreads of the Indian tribes who inhabit these mountain-shadowed inlets, are brilliant.

In the paintings she did during the last years of her life, the darkness of the forest is lessened. The intensity is gone. The subjects are now sunlit patches, open slopes of burned-over land, waves beating against a sandy beach with the forest in the background. In these, she becomes even gay at times. Some will like the austerity of her baroque compositions better; others prefer the exuberance of these later works.

In her career, she was limited only by her isolation and by her material struggles. For many years she had to make ends meet by running a boarding house. Yet out of these restrictions, she managed to carve an integrity both personal and pictorial. Her work, while regional in content, has much more than regional significance. As her biographer, Ira Dilworth, states: "The volume and variety of her work are staggering. Never was there a truer, simpler or more sincere Canadian. It is impossible to think of her work as finished—it goes on. It is equally impossible to estimate the influence that it will exert."

Henday Discovers the Blackfoot

by LAWRENCE J. BURPEE

ANTHONY HENDAY was born in the Isle of Wight, in the first half of the eighteenth century. It is not possible to be any more precise about the date of his birth, and even the form of his name has been in some doubt, the copy of his journal in the Public Archives of Canada (edited by the present writer in 1907) giving his name as Hendry.

All that is known of his early life is that he was outlawed for smuggling in 1748. That does not appear to have done his reputation any particular harm, at any rate with the Hudson's Bay Company, as that eminently respectable corporation engaged him in its service in 1750 and sent him out to York Factory, on Hudson Bay. Perhaps in 1750 the English authorities looked upon banishment to the territories of the Hudson's Bay Company, in the wilds of North America, in much the same way as banishment to Botany Bay was regarded at a later date. At any rate, it served the same useful purpose of taking a troublesome young man off their hands. Incidentally, the Hudson's Bay Company secured a capable, intelligent and enterprising servant.

After a few years' uneventful service at York Factory, or at one or another of the Company's trading-posts, Henday was sent inland to explore the vast interior of its territories and to persuade more of the natives to bring their furs down to the Bay. He started out in June, and, with one or two Indian followers, paddled up the Hayes River to Oxford Lake. There he left what was afterwards known as the Hayes Route to Lake Winnipeg, and crossed over to Cross Lake on the Nelson River, and from there proceeded by way of Moose Lake to the Saskatchewan.

His evident purpose was to learn something of the vast level plains that lay to the westward of Lake Winnipeg and Lake Winnipegosis, and the tribes and immense herds of buffalo that roamed about them—regarding all of which he may have been told at least enough to whet his appetite by the Indians who traded at York Factory. By taking the Cross Lake and Moose Lake route he avoided the rough waters of Lake Winnipeg.

Ascending the Saskatchewan as far as The Pas, where to-day the railway to Fort Churchill crosses the river, Henday paddled up Carrot River, and then abandoned his canoes and struck boldly across the prairies. About the middle of August, he saw his first buffalo. A few days later he crossed the South Saskatchewan, at a place now known as The Elbow. Henday was now in the heart of the buffalo country, a rich pasture land, a sportsman's paradise, abounding in moose and deer and all sorts of small game.

"I went", says Henday, "with the young men a buffalo hunting, all armed with bows and arrows; killed several; fine sport. We beat them about, lodging twenty arrows in one beast. So expert are the natives that they will take the arrows out of them when they are foaming and raging with pain and tearing the ground up with their feet and horns until they fall down."

Travelling on to the westward, Henday crossed the Red Deer River about the middle of October, and a few days later met a party of Blackfoot Indians, who took him to a large camp of their tribe. He was now in what is to-day the Province of Alberta, somewhere between Calgary and Edmonton. Henday gives us an interesting account of this famous confederacy of Indian tribes. He was the first white man to visit them, and they were as curious about his clothing and manners and customs as he was about theirs. As has so often happened, the Blackfoot treated Henday with uniform

kindness, in marked contrast to their attitude towards later traders. The fault probably lay with the white man.

The most memorable incident of Henday's visit to the Blackfoot, with whom he spent the winter, returning to York Factory in the summer of 1755, was his reception in the lodge of the Great Chief in his principal village. Two hundred tepees were pitched in two parallel rows. Down this highway marched the English traveller, watched from each door by curious eyes, gazing for the first time upon a white man. The Chief's lodge, large enough to contain fifty persons, stood at the farther end of the village.

The Chief received Henday seated on a sacred white buffalo skin, and attended by twenty of his warriors. He made signs for the traveller to sit on his right hand. The pipe of peace was produced and passed around in solemn silence. Boiled buffalo meat was then brought to the guests in willow baskets.

Through Attickasish, his interpreter, Henday told the Chief of the Blackfoot that he had been sent by the Great Leader of the white men, who lived by the side of the great eastern waters, to invite his young men down to visit him and to bring with them fur skins to trade for guns, powder and shot, beads and other commodities.

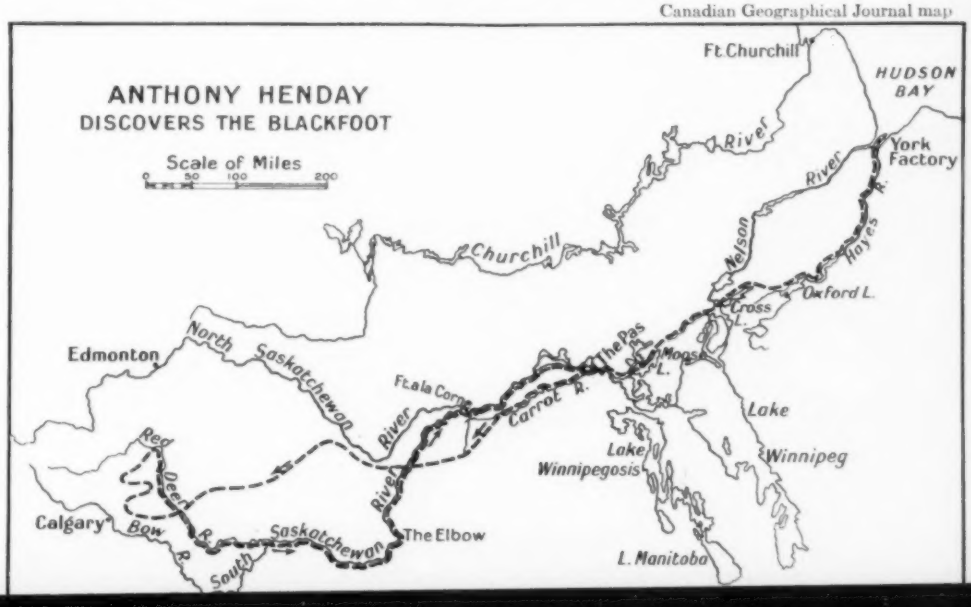
The Chief listened politely, but said little. The white man's fort was far off, and his young men knew nothing about canoes. Then he turned the talk into other channels until it was time for his guests to go.

The following day Henday had another interview with the Chief, urging him to let his people go down to Hudson Bay to trade. "Let some of your young men come down to the fort with me", he said, "and I promise that they will be received with every kindness. They will get guns and everything else they desire."

The shrewd old warrior was not greatly impressed, even with the idea of getting firearms. That was to come later. At present the Blackfoot were content to defend themselves and earn their daily meals with bows and arrows, as their fathers had done before them. The fort of the white men was very far away, the Chief repeated. His young men could not live without the flesh of buffalo. They were accustomed to travel on horseback, not in canoes. They knew not the use of a paddle, and they could not live upon fish. Why, after all, should they go so far from their home? They never wanted food—or so he said—on these boundless plains. They followed the buffalo from place to place, taking what they needed from day to day. Their bows and arrows were all they required. He had been told that those who went to the forts of the white men oftentimes came back hungry, and sometimes did not return. "Such remarks", Henday confided to his journal, "I thought exceeding true."

On his journey back to Hudson Bay, Henday visited a French trading-post on the lower Saskatchewan, in the last days of French rule—the only meeting of the kind in the west that has been recorded. Henday admired the light canoes of the French, and their skill in trading with the natives. "If they had Brazile tobacco, which they have not, they would entirely cut off our trade", he observed. But that was not to be.

Canadian Geographical Journal map



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EDITOR'S NOTE-BOOK

Harold G. Long, Managing Editor of *The Lethbridge Herald*, joined that newspaper in 1911 as a cub reporter. He had already gained experience as a school teacher and as a telephone company employee. Born on a farm in Goderich, Ontario, he began his education there and completed it in Regina. Travelling widely in connection with his work for the Herald, Mr. Long has investigated irrigation developments and methods in the mountain and Pacific states of the United States.

* * *

Denis Harvey, author of "The Influence of Geography on Import Trade", is Director of the Import Division, Department of Trade and Commerce. Born in England in 1909, he came to Canada in 1929 and attended Macdonald College, from which he graduated in Agriculture Economics. His thesis on "Agricultural Opportunities in the Export Trade" received recognition in the Canadian Economic Fellowship Competition. While employed with a firm of investment dealers in Montreal, he was enabled to familiarize himself with problems of the import trade and ocean transportation. Mr. Harvey enlisted in the Royal Canadian Navy in September, 1939, and in 1942 was appointed Assistant to the Director of Organization at Naval Headquarters in Ottawa, later becoming Naval Comptroller, with the rank of Commander. He joined the Department of Trade and Commerce in October, 1945.

* * *

S. G. Cooper, B.Sc., is a graduate of McGill University. For some years he was a teacher, but after the outbreak of war joined the R.C.A.F. and served as a pilot and intelligence officer. Since returning to Canada, he has lived in Montreal, where he is engaged in writing on industrial and scientific subjects. During the past summer Mr. Cooper acted as special commentator for the International Service of the C.B.C. at the first assembly of the Provisional International Civil Aviation Organization.

Donald W. Buchanan—See biographical sketch in June, 1946, issue.

* * *

Lawrence J. Burpee—See biographical sketch in January, 1946, issue.

* * *

ERRATA

July issue, 1946, page 21, title number three:—
For "Black's Harbour, Nova Scotia"—read "Black's Harbour, New Brunswick".

August issue, 1946, page 55, lines 11 and 12 under heading, "The Citadel":—
For "which gained immortal glory at Hong Kong"—read "which gained immortal glory in Sicily, Italy, Belgium and Holland".

* * *

AMONGST THE NEW BOOKS

The New Europe: An Introduction to its Political Geography
by WALTER FITZGERALD
(Harper & Brothers, New York, $2.75)

Political geography may be described as four dimensional; it includes the length and breadth of the area it covers, its resources, industry, peoples and political organization—and acquires depth in taking into consideration the history of the area, and even, at times, sending up nebulous spirals of conjecture towards an unknowable future. It would probably be incorrect to say that the author had selected Europe as his subject; at the present time the eyes of all politically minded geographers are turned towards that continent, and to the geographical writer it seems to be the inevitable subject. It is to geographers that we must look for an understanding of the incredible complexities of the European scene, and we can only hope that sound geographical knowledge and political acumen will guide the peace now being framed.

The author begins (for purposes of contrast, perhaps) with a study of the British Isles, where, with the exception of the now classic squabble of a divided Ireland, there are no vexed boundaries, no persecuted enclaves of other races, no hopeless aspirations for freedom, no pogroms, no massacres, and no concentration camps. From this settled scene he takes the reader to each disputed boundary in the troubled Continent of Europe: France and Germany, Poland and all her neighbours—the land of the Czechs and Slovenes, Hungary, Romania and Bulgaria, Greece, Italy, with Trieste, and the Dalmation Coast; the Baltic states that were, which are now part of the Soviet Republic, Finland and Russia; each with its problems of racial minorities, of resources coveted by one or another, and the antagonisms and blood feuds of a continent in chaos.

Behind the wall of silence and mystery that encloses Russia there is peace and order. We are not told, nor

(*Continued on page XIX*)

(*Continued from page XVIII*)

does the author enquire too closely, how that peace was achieved or order enforced, but it is apparent that the diverse races which make up the Russia of today must accept her rule, or they would have broken in the trials of the last five years. In considering Russia, Professor Fitzgerald does not confine himself to Russia in Europe but views the whole expanse from the Baltic to Bering Straits as one unit, an extension of Europe into Asia without boundary or limit. This, of course, includes Sir Halford MacKinder's heartland, to which the author pays some service, although how that theory will stand up against air travel and to-day's weapons is any one's guess. In any event, Russia emerges as the predominant power of Europe, with resources which have, as yet, hardly been scratched, and a virile population imbued with the crusading spirit of what is to it a new religion.

The concluding section of the book describes European colonies in various parts of the world, mainly as they affect the politics of Europe.

It all makes very interesting, but by no means pleasant, reading. Professor Fitzgerald gives us a picture of a continent endowed above all others with the resources which make for man's wellbeing, and populated by the most energetic and skilful races of the world, but so broken up into nations and races, so divided by language, religion and ideology, cherishing the rights and wrongs of a thousand years, that the valuable and pleasant things provided by nature cannot be distributed for the common good. In its greatest political unit, Russia, we see the monstrous police state, lacking liberty of thought, regimented and controlled beyond anything we can imagine, and without even the compensation of a better provision for the material needs of its citizens. Elsewhere, there is a strife-torn chaos of disputed boundaries, displaced populations, hatred and confusion, with the grim spectre of famine always in the foreground—truly, no happy picture in this year of grace one thousand, nine hundred and forty-six.

P.E.P.

* * *

Volcanoes, New and Old
by SATIS N. COLEMAN
(Longmans, Green & Co., Toronto, $4.75)

The new volcano, Paricutin, which introduced itself to the world so violently in a Mexican corn field a few years ago, seems to have been the inspiration of this book. The author was one of the fortunate ones who actually witnessed the early stages of a volcano's life, a phenomenon never before recorded or studied by trained geologists. It appears that Miss Coleman was a writer on musical affairs, but her interest and imagination were so stirred by the eruption of Paricutin that, greatly to the advantage of the reader, she made a layman's study of volcanology which resulted in the present book. Miss Coleman makes no pretense to having expert knowledge of the ways and workings of volcanoes but writes simply and effectively, as an interested amateur. She has no lack of literature from which to draw, since volcanoes or volcanic eruptions have been recorded year after year since Pliny the younger told the story of the destruction of Pompeii

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and Herculaneum nearly two thousand years ago. Such catastrophes may be rated as the most appalling, in their devastation, of all the malignant processes of nature, counting victims in thousands and tens of thousands and laying waste millions of acres of the earth's surface. The interested reader will wonder if the earth is not entering into a new phase of volcanism, since within the last century or so volcanic activity has surpassed that of any period recorded in history.

An interesting book, well written and beautifully illustrated with photographs that emphasize man's insignificance in the face of the forces of nature.

P.E.P.

* * *

The Lure of Montreal
by W. P. Percival
(Ryerson Press, Toronto, $3.50)

The author of this book, Dr. W. P. Percival, is Deputy Minister of Education in the Province of Quebec, and it is obvious in every line that he knows and loves his native province, its long history and the stories and legends that have themselves become almost inseparable from recorded history. His wide knowledge permits him to describe Montreal and its environs with a wealth of detail that omits no point of interest and misses no historical association. Perhaps the reader may think, at times, that a description which includes each sparrow-crowned monument to some departed and all but forgotten worthy is a little too detailed and that the picture would be better if painted in larger, bolder strokes. That, however, is comment and not criticism, which would be out of place in dealing with a valuable and authoritative book that is both a guide to the inquiring tourist and a mine of information to the student and lover of the history of his own country.

Dr. Percival has shown rare judgement in the selection of his illustrations; some of the reproductions of old drawings, in particular, are of great charm and interest. P.E.P.

* * *

The Story of Burma
by F. Tennyson Jesse
(Macmillan & Co. Ltd., Toronto, $3.50)

This brief and informal history of Burma is apparently written by one who is familiar with the official or pukka sahib view of Burmese affairs. Miss Jesse is favourably known as a novelist and playwright, but this, her first venture into the field of history, leaves the reader with the impression that he has been given something less than the story of that fascinating country and its people. Unfortunately, the book was written before the Japanese were expelled from Burma, and the epic story of that campaign could not be included; nor can we learn how the Burmese themselves, passive pawns in the game of Empire, feel about the trials to which they have been subjected. It goes without saying that the book is well written; the illustrations are good and there are interesting end maps. P.E.P.

Eskimo Summer
by Douglas Leechman
(The Ryerson Press, Toronto, $2.50)

Douglas Leechman's book, *Eskimo Summer*, is an education. Contrary to most educational books, which we should read but never do because of their dullness, this one is interesting and colourful. The story revolves around a summer trip which the author, an archaeologist at the National Museum of Canada, undertook in order to do excavation work on early Eskimo camp sites in the area of Port Burwell on the southern side of the entrance to Hudson Strait. Such an account might well have been written as a dry academic report, intelligible only to fellow-scientists and of little interest beyond the walls of various museums. Instead, Dr. Leechman has written one of the most interesting and readable books on Eskimo life that has appeared since Dr. Jenness's *People of the Twilight*.

The story is a true one, and the characters are real Eskimo who lived around the Port Burwell trading-post at the time of the author's visit. He arrived there on the famous Eastern Arctic Patrol ship *Nascopie*, in 1935, to look for ancient Eskimo camp-sites. In excavating them he hoped to find some implements which would indicate the life and time of living of the race of people who inhabited these Arctic shores prior to the present-day Eskimo. Although no "Dorset culture" igloos were found, artifacts of these people were discovered south of the trading-post. Throughout the book, however, although scientific work is the reason for the expedition, it is kept in the background, the main theme being a pleasant summer spent with Eskimo companions.

In hiring a guide to take him out to the Button Islands in Hudson Strait, Dr. Leechman found that he would have to bring the Eskimo's whole family, "since someone had to get meat for them or they would starve". One-eyed Bobby was chosen as the most suitable native for the work, and was accompanied by his brother, Mark, to help with the hunting, and his wife, Lily, who cooked for the Eskimo. Also included in the expedition was Bobby's sister, Jenny, "who would look after you since she was cooked for white men before", and little Jimmy, who was only four. This Eskimo family "adopted" Leechman into their group and continued their usual summer's sealing activities from the Button Islands while he did his scientific work. The author knew little of the Eskimo languages beyond that contained in his simple dictionary, and the natives spoke but a few words of English, but it was amazing how well they got along together.

Bobby was typical of the intelligent Eskimo of the Arctic. "He stood 5½ feet in height, well and squarely built, with broad shoulders, a narrow waist, shortish legs, small hands and feet. He carried himself easily and confidently, alertness and competence were indicated in his every look and action. Here most undeniably, was a man." Jenny was the archaeologist's chief assistant,

(*Continued on page XXI*)

(*Contined from page XX*)

since the men had to spend much of their time hunting. "She was intelligent and quick. She could not have been more than twenty-five, but her shapeless clothes gave no hint of her figure. There was no suggestion of style, or grace, or even youthfulness about her." She was shy and yet pleasant when spoken to. Her normal expression was rather straight-faced, almost too serious, but her disposition was equable, unlike Lily's, and she could be very gay and happy, as when teaching the "kabloona" cat's cradles or helping with the strange excavating. The child, Jimmy, "was, without exception, the dirtiest and happiest little urchin I have ever encountered. He did this and that and the other whenever the spirit moved him, and it moved him with continuous motion."

The book is alive with human interest as the author describes his Eskimo companions, their thoughts, and awkward conversation; his own work and foibles; and the numerous amusing and exciting incidents which occurred during their several weeks of travelling and camping together. The language is extremely simple, yet filled with humour.

The refreshing thing about this book is that it represents the Eskimo as human beings—not as museum pieces, or a peculiar race of little-known strange people, but as down-to-earth humans with their own problems and customs which result from their different and difficult environment. The author, having studied the customs and antiquities of the Eskimo for many years, is fully qualified to write intelligently about the people and their habits. He has very cleverly worked this information into his narrative so that when the reader has finished what on the surface appears to be simply a very interesting story of a summer in the Arctic, a great deal has been learned about our modern Eskimo. For those who want authentic information about a small group of Canadian Eskimo, the book is highly recommended; for those who simply want interesting, light reading, there will be no disappointment.

In addition to giving the reader an accurate picture of an Eskimo family, typical of most of the Eastern Arctic Eskimo population, Dr. Leechman also gives one a feeling for the region. "It's a new world, not only physically but mentally. Physically, because it's a world stripped to the bare essentials, rock and water. There is little else. Mentally, because danger and courage are the normal parts of an everyday life lived close to nature . . . One leaves the North with a keen sense of regret, with a feeling that one is giving up something which is very good and returning to a life which, whatever else it may be, is not quite so good; a life where problems are more numerous and more complex, but where the stakes are of less value, the decisions of less importance, and the gains less desirable."

J. L. ROBINSON.

Your Forests
by MARTHA BENSLEY BRUÈRE
(Longmans, Green & Co., $3.00)

Forests, once devoted chiefly, the historians say, to the "princely delight and pleasure" of the regional monarch, have long since taken on a more commercial aspect. They not only provide timber and other forest products, but also exercise certain climatic effects and protect localities against injurious influences.

Canada is nearly one-half, and the United States about one-third, forest, according to Mrs. Bruère's lively and dramatic narrative about forests and what is being done (and what is *not* being done) to protect them. Forests renew themselves, given a fair chance, but man, master of forests, is less the timid protector and more the ruthless destructionist. Only comparatively recently has he been seriously concerned with cultivating and fostering one of North America's greatest resources.

Dealing with her favorite subject, Mrs. Bruère (a member of the United States Forest Service) is entertaining and informative. It is pleasant, too, for Canadian readers that in a book about United States forests, and to a degree about United States economy, references to Canada should be so generous, and that photographs depicting Canadian forest wealth should be included amongst the copious illustrations. Her conclusions are thought-provoking and stimulating. F.H.W.

* * *

Exercises in the Geography of Europe
by WILLIAM O. BLANCHARD
(D. C. Heath and Company, Boston, $1.25)

A series of questions for use in teaching the geography of Europe in college classes, with a list of selected references and an appendix indicating the comparative importance of Europe in world production of certain essential commodities. P.E.P.

* * *

The Reddis of the Bison Hills
by DR. CHRISTOPH VON FURER-HAIMENDORF
(Macmillan & Co., Limited, Bombay and London)

This is an example of what a book on aboriginal sociology can be, when undertaken by a competent and sympathetic author. Dr. von Fürer-Haimendorf is a young man, born in 1909, and he has already made a name for himself as a competent anthropologist and skilful author.

He and his wife have not hesitated to spend long periods of time living among the very primitive Reddis at the extreme eastern end of the native Province of Hyderabad, a district which has long been notorious for its virulent malaria, its inhospitable climate and inaccessible villages. They have returned with masses of interesting information, competent and artistic photographs and, what is more, a detailed study of the results of the recent impact of more advanced cultures on these primitive people, a series of suggestions for

the amelioration of their conditions and, what is most important of all, an account of precisely how these suggestions have resulted in an improvement of the situation and relief of their hardships.

The Reddis have been described as a fossil tribe. They are among the oldest of the old races still to be found in India. When the recent "Aryan" races moved in, the Reddis had long been there. They were there already when the Dravidians came many thousands of years before; they are earlier even than the very primitive Nagas, and their culture has persisted largely unchanged for many centuries.

This is not an abstract and theoretical study; dozens of individuals are introduced by name, their place in the social structure described, and their personal characteristics and adventures related in such a way as to enable the reader not only to see and understand but in some small way at least to sympathize. Two men who do not belong to the Reddis' tribe are prominent in the book: first of all, the Nizam of Hyderabad and Berar, whose enlightened policy has done much to help various depressed groups in his dominions, and, secondly, the Swami of Parantapalli, who, though he prefers to remain anonymous, has devoted his life to helping these primitive and simple people and has, perhaps, enabled the occidental world to gain a new and truer concept of the Indian Fakir or Yogi at his best.

It is interesting and pleasant to note the great improvement in the paper, binding and printing. The book was printed at the Government Central Press, Hyderabad-Deccan, in 1945, and in spite of the difficulties of wartime paper and labour, they have produced a thoroughly pleasant example of typography.

DOUGLAS LEECHMAN

* * *

This is Canada

A book of photographs edited by DONALD BUCHANAN
(Toronto, The Ryerson Press, 1945, $2.00)

Beautifully produced and printed, this is a book which will make Canadians wish to know their country better and which they will be proud to send to friends in other lands. In his choice of illustrations Mr. Buchanan has had the co-operation of the National Film Board; for the most part the pictures are from its large collection. His work with it and with the Wartime Information Board, and his many contributions to the cultural life of Canada in his writings and in the production of documentary films, assure a comprehensive and vivid portrayal of the Canadian scene. "The way we work, how we live, our social institutions, the landscape and industries of the Dominion" are shown in these sixty photographs, which are accompanied by concise explanatory notes and occasional interesting commentaries by way of introduction to the various sections.

The book is prefaced by a short essay in Morley Callaghan's happiest vein, evoking just the right spirit for the enjoyment of the pictures which follow.

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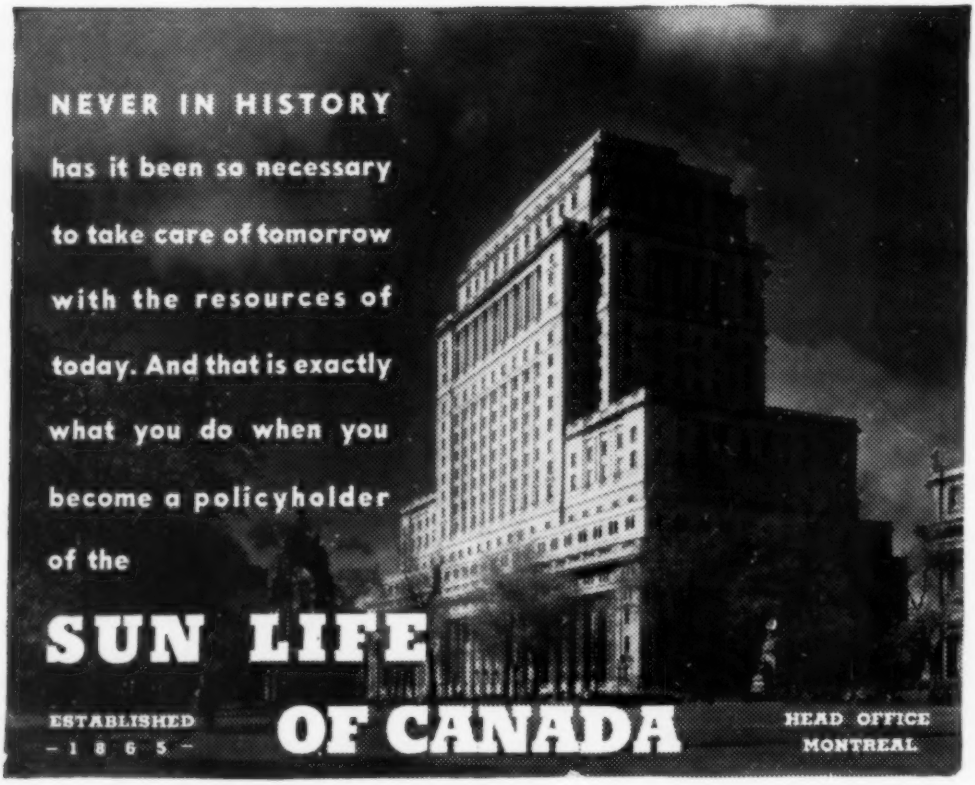

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